

CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE CHEATHAM LAKE WATERSHED

4.1 Background.

4.2. Characterization of HUC-12 Subwatersheds

4.2.A. 051302020101 (Cumberland River)

4.2.B. 051302020102 (Madison Creek)

4.2.C. 051302020103 (Cumberland River)

4.2.D. 051302020104 (Cumberland River)

4.2.E. 051302020105 (Whites Creek)

4.2.F. 051302020106 (Richland Creek)

4.2.G. 051302020107 (Cumberland River)

4.2.H. 051302020108 (Marrowbone Creek)

4.2.I. 051302020201 (Mill Creek, Upper)

4.2.J. 051302020202 (Mill Creek, Lower)

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4.2.L. 051302020302 (Sycamore Creek, Middle)

4.2.M. 051302020303 (Sycamore Creek, Lower)

4.1. BACKGROUND. This chapter is organized by HUC-12 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. USGS (United States Geological Survey) gaging stations and STORET sites
- iii. Location of permitted activities
- iv. Description of nonpoint source contributions

The HUC can range from 2 to 16 digits long, more digits indicating a smaller and smaller portion of the watershed is represented. The Cheatham Lake Watershed (HUC 05130202) has been delineated into thirteen HUC-12 subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 2.0 (developed by Tetra Tech, Inc for EPA Region 4) released in 2003.

WCS integrates with ArcView® v3.x and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 2001 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds.

Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

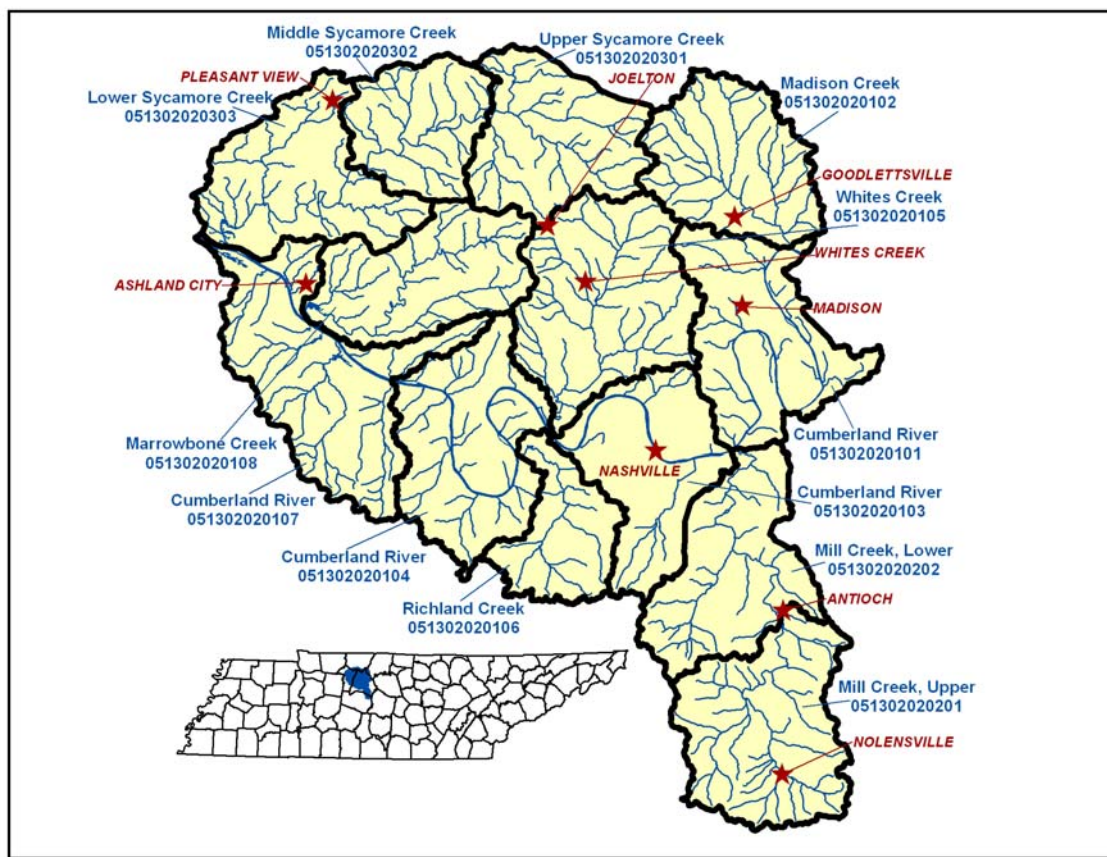


Figure 4-1. The Cheatham Lake Watershed is Composed of Thirteen USGS-Delineated Subwatersheds (12-Digit Subwatersheds).

4.2. CHARACTERIZATION OF HUC-12 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Cheatham Lake Watershed.

HUC-8	HUC-10	HUC-12
05130202	0513020201	051302020101 (Cumberland River)
		051302020102 (Madison Creek)
		051302020103 (Cumberland River)
		051302020104 (Cumberland River)
		051302020105 (Whites Creek)
		051302020106 (Richland Creek)
		051302020107 (Cumberland River)
		051302020108 (Marrowbone Creek)
	0513020202	051302020201 (Mill Creek, Upper)
		051302020202 (Mill Creek, Lower)
	0513020203	051302020301 (Sycamore Creek, Upper)
		051302020302 (Sycamore Creek, Middle)
		051302020303 (Sycamore Creek, Lower)

Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages. NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

4.2.A. 051302020101 (Cumberland River).

4.2.A.i. General Description.

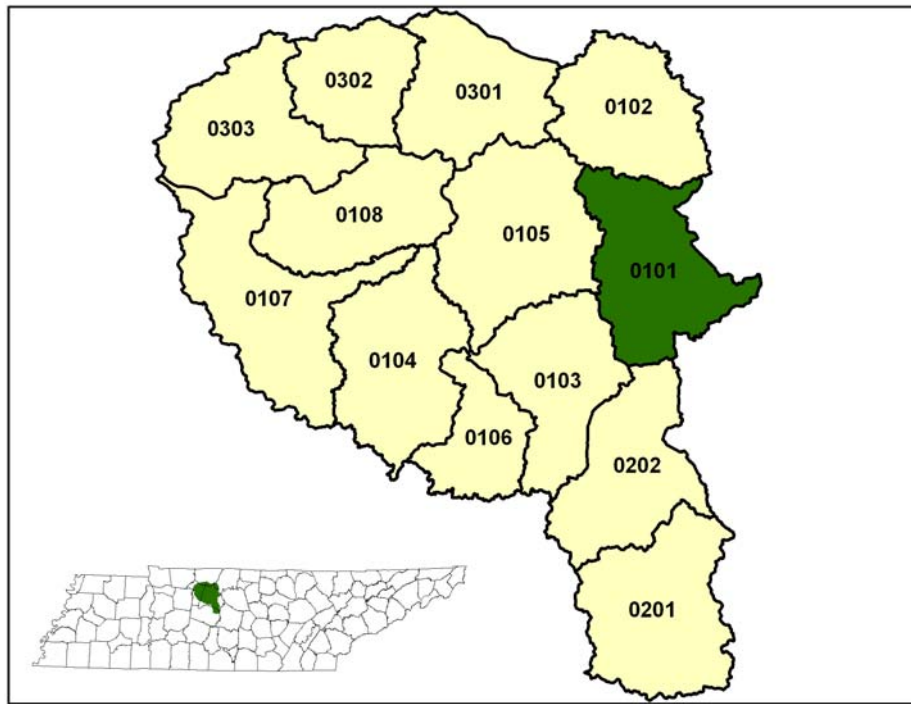


Figure 4-2. Location of Subwatershed 051302020101. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

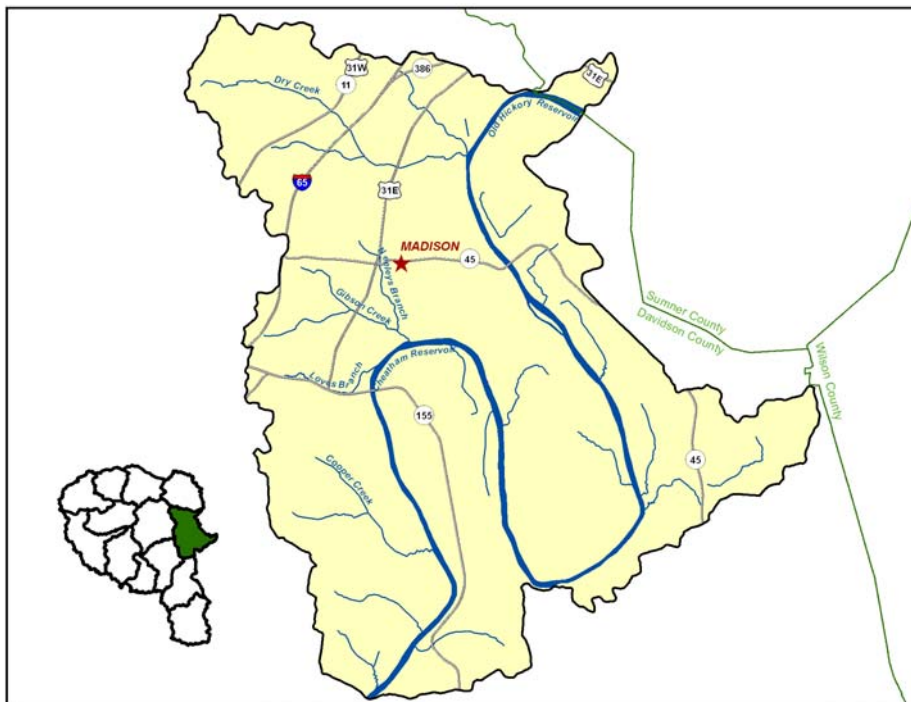


Figure 4-3. Locational Details of Subwatershed 051302020101.

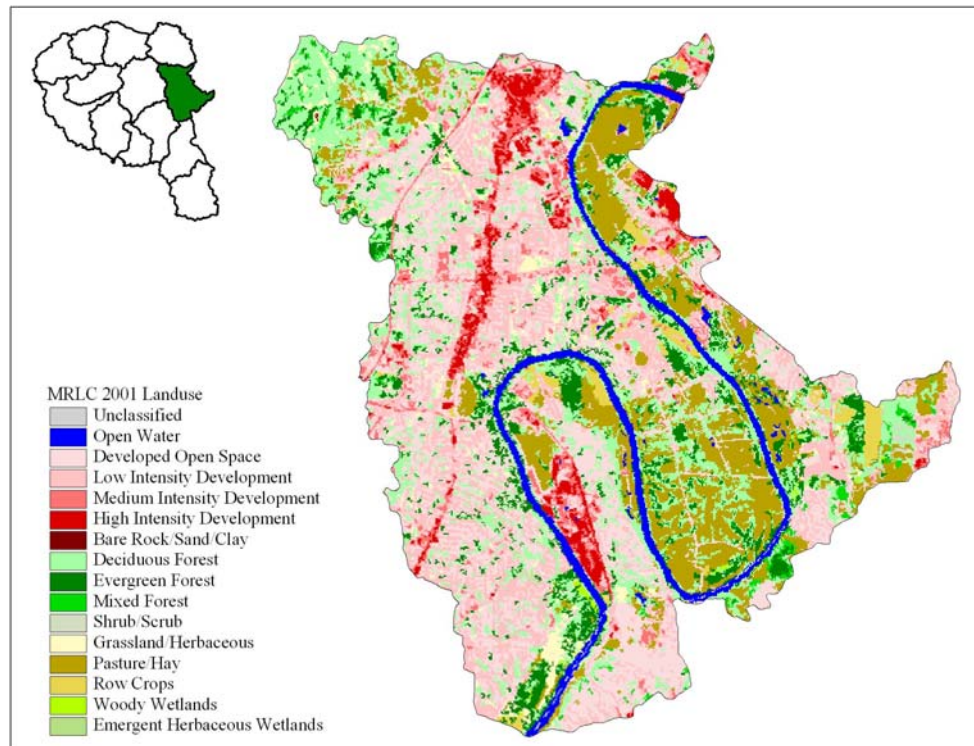


Figure 4-4. Illustration of Land Use Distribution in Subwatershed 051302020101.

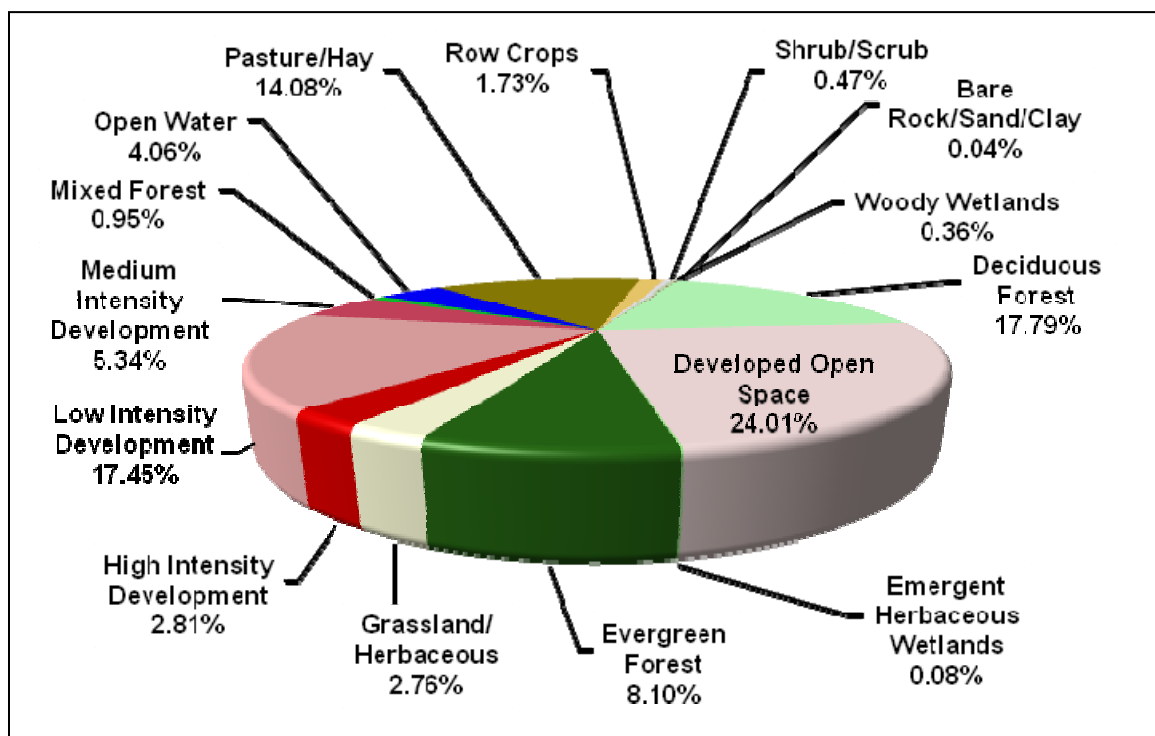


Figure 4-5. Land Use Distribution in Subwatershed 051302020101. More information is provided in Appendix IV.

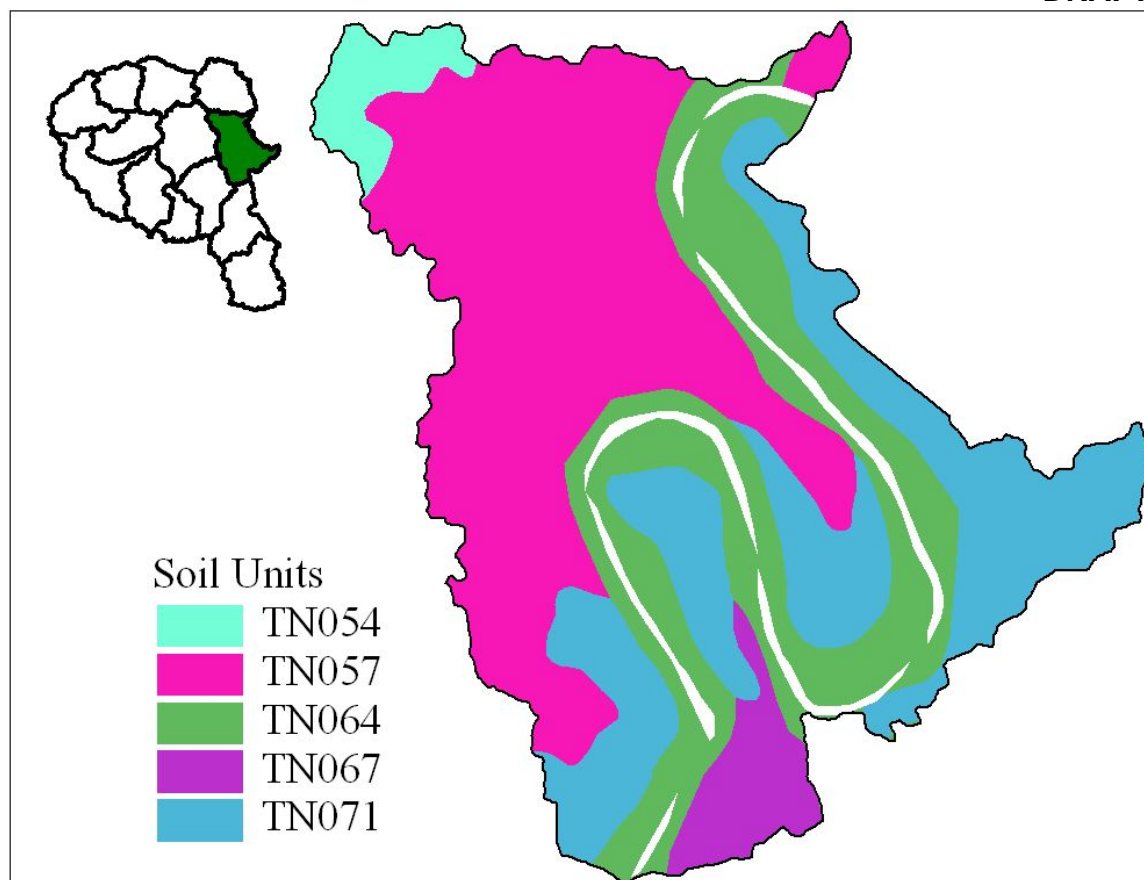


Figure 4-6. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020101.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN067	2.00	C	2.69	5.51	Silty Loam	0.35
TN071	0.00	C	2.37	5.70	Silty Loam	0.33

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020101. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Davidson	510,784	535,032	569,891	10.05	51,327	53,764	57,267	11.60
Sumner	103,281	121,936	130,449	0.07	75	88	94	25.30
Totals	614,065	656,968	700,340		51,402	53,852	57,361	11.60

Table 4-3. Population Estimates in Subwatershed 051302020101.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Hendersonville	Sumner	32,188	12,472	8,395	4,069	8
Goodlettsville	Davidson	11,219	4,761	4,263	489	9
Lakewood	Davidson	1,867	830	582	248	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		533,792	237,584	216,880	20,382	322

Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020101.

4.2.A.ii. USGS Gaging Stations and STORET Sites.

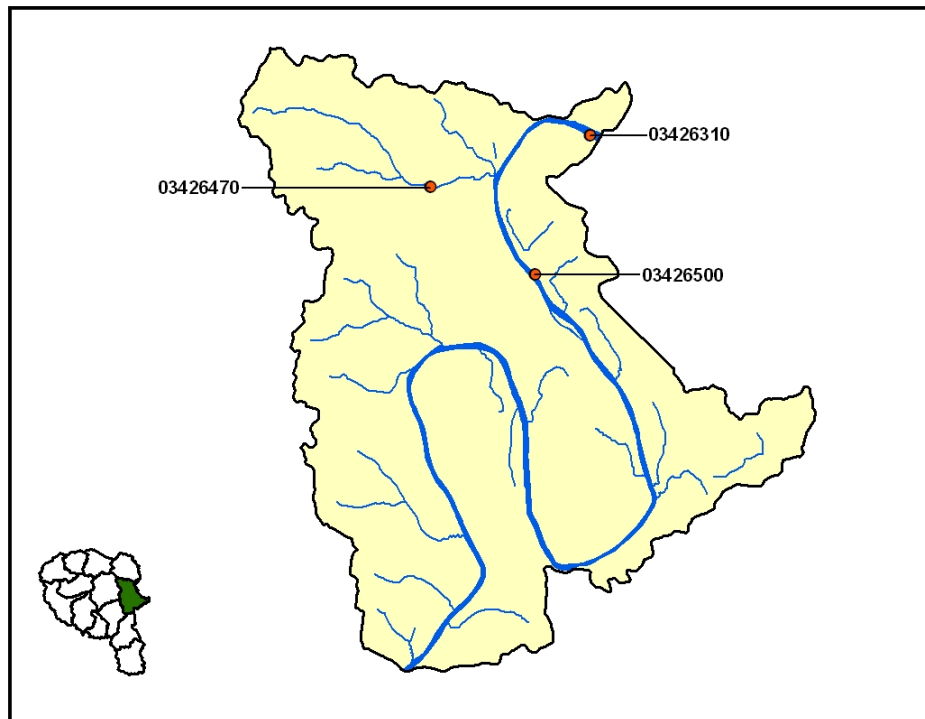


Figure 4-7. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020101. More information is provided in Appendix IV.

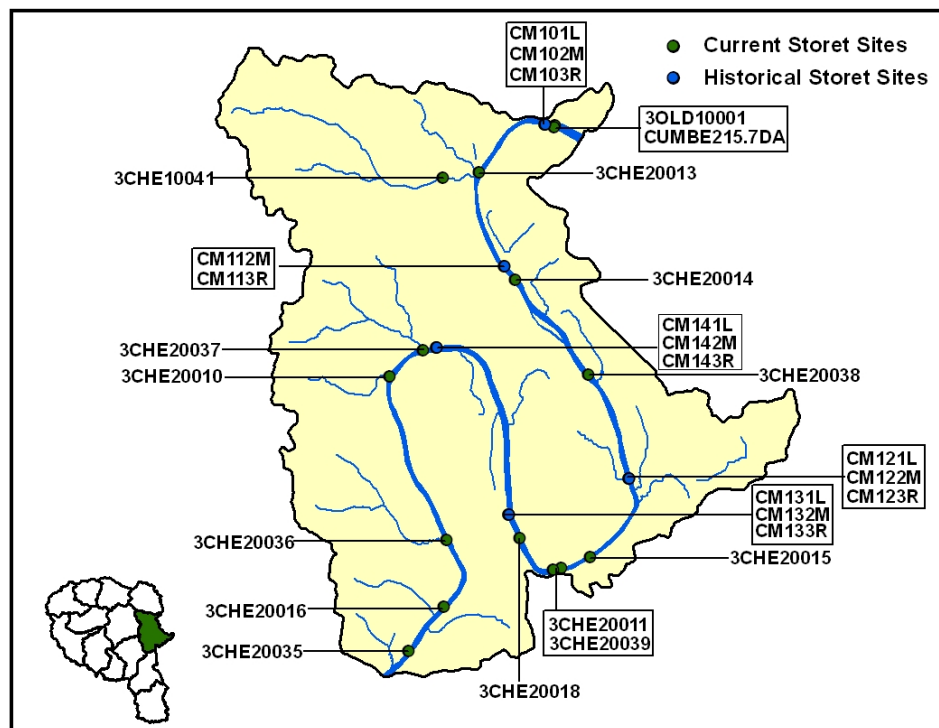


Figure 4-8. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020101. More information, including site names and locations, is provided in Appendix IV.

4.2.A.iii. Permitted Activities.

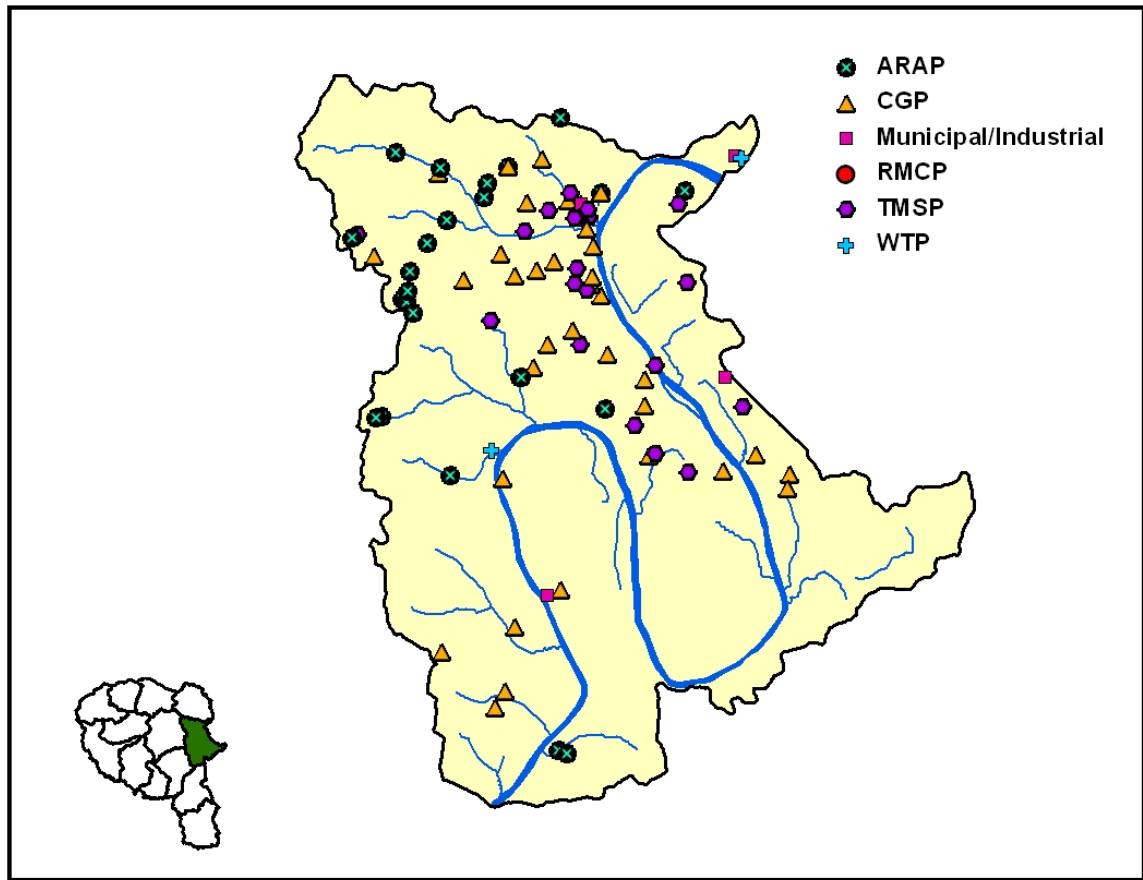


Figure 4-9. Location of Permits Issued in Subwatershed 051302020101. More information, including the names of facilities, is provided in Appendix IV.

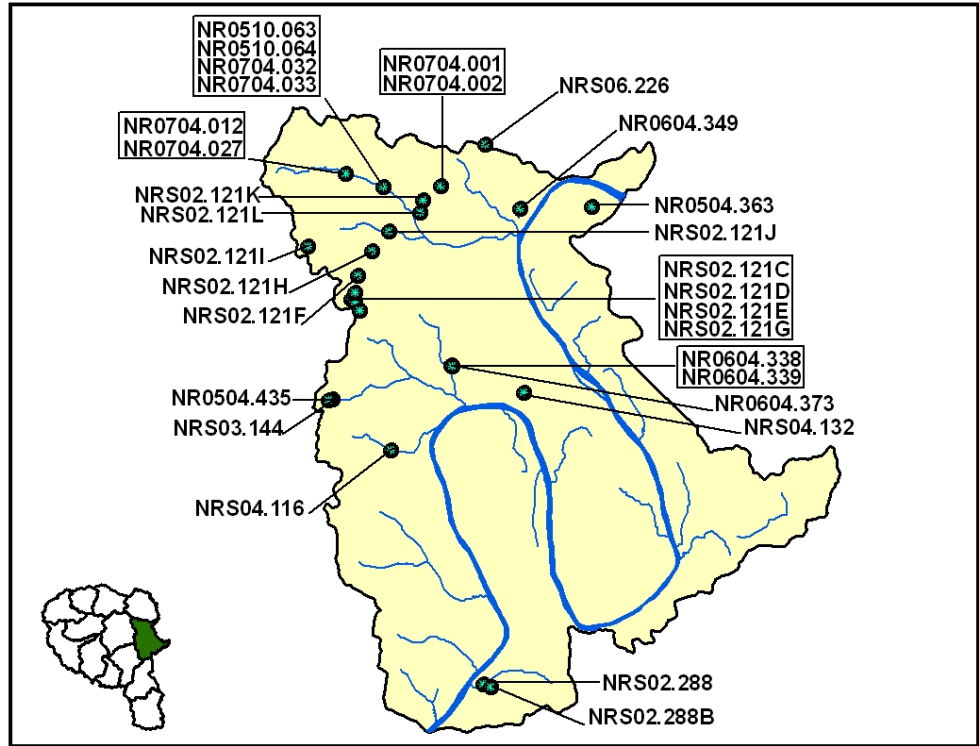


Figure 4-10. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020101. More information is provided in Appendix IV.

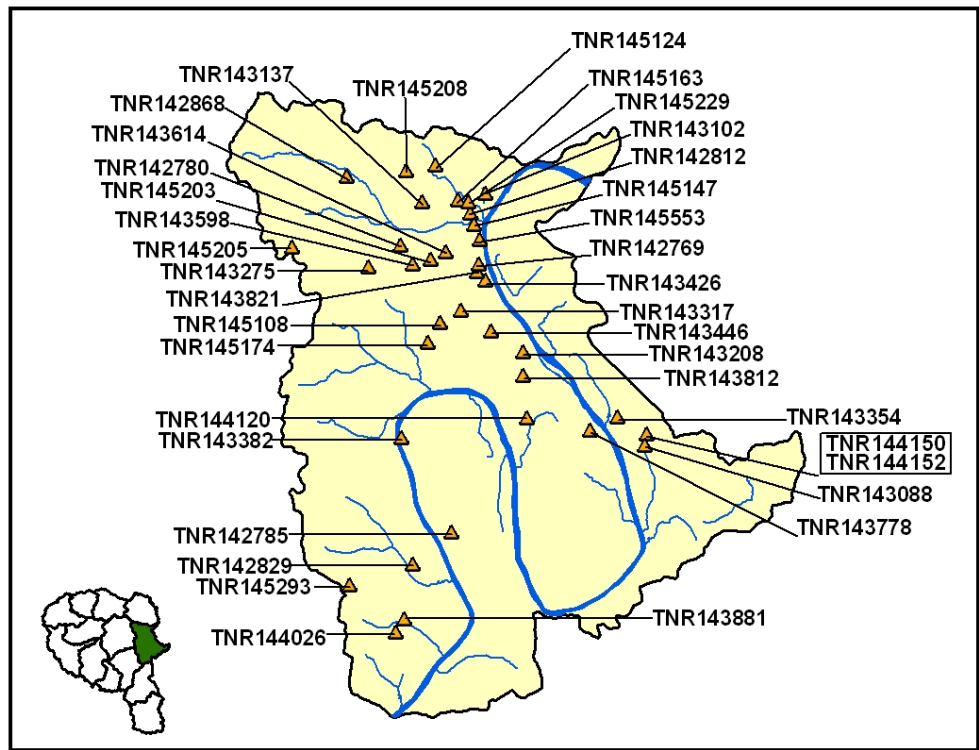


Figure 4-11. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020101. More information is provided in Appendix IV.

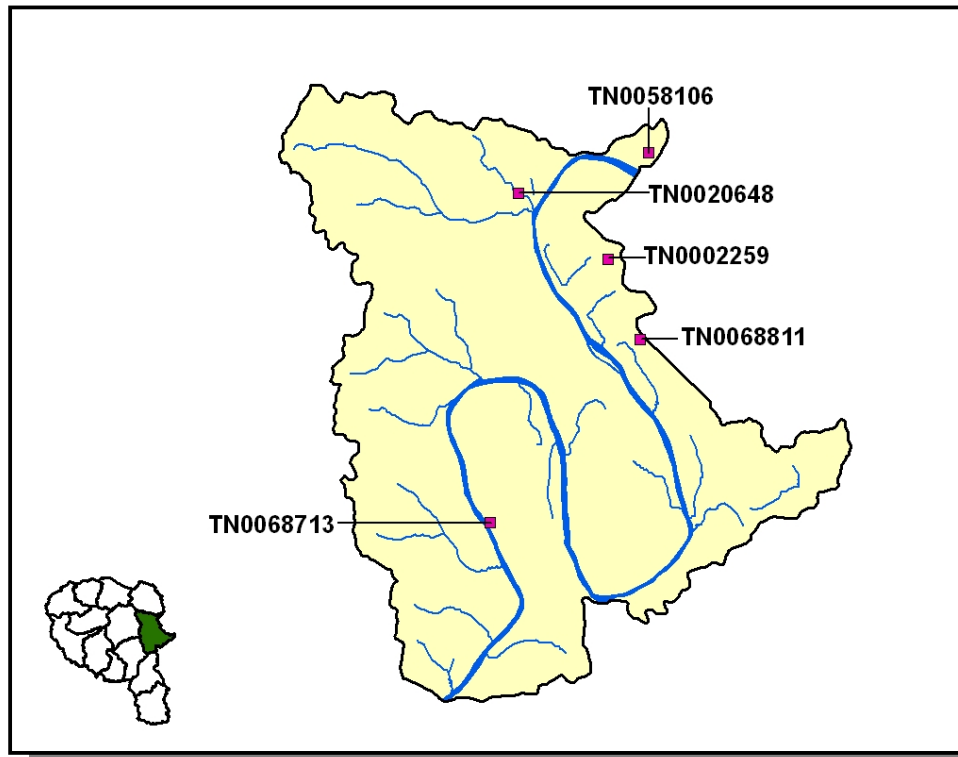


Figure 4-12. Location of permitted MUNICIPAL and INDUSTRIAL facilities in subwatershed 051302020101. More information, including the name of the facility is provided in Appendix IV.

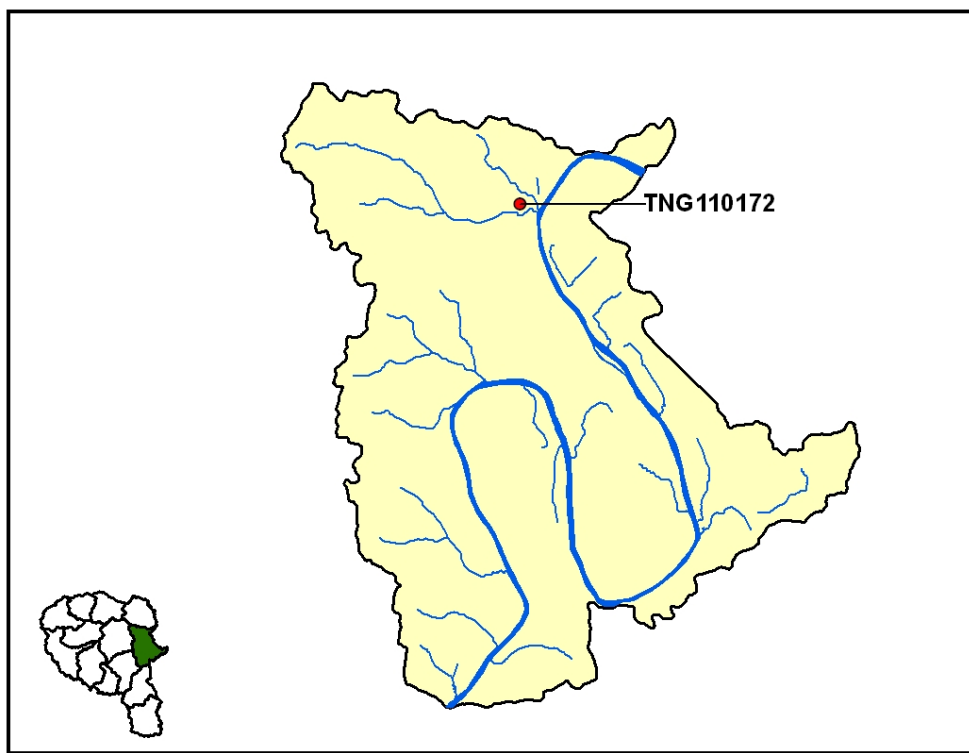


Figure 4-13. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020101. More information, including the names of facilities, is provided in Appendix IV.

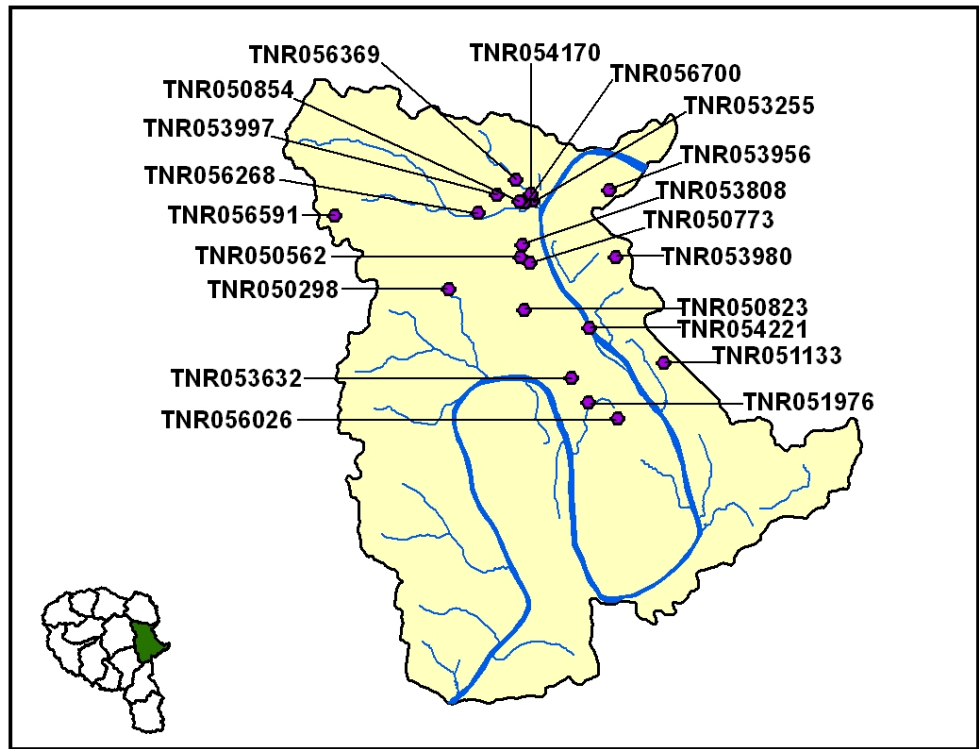


Figure 4-14. Location of TMS (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020101. More information is provided in Appendix IV.

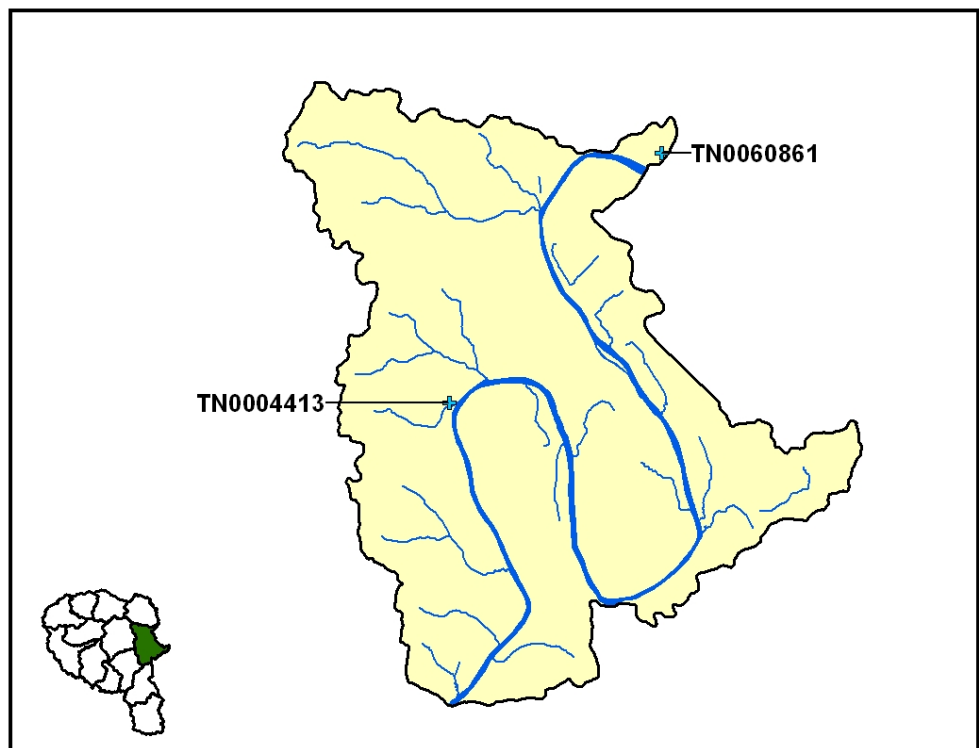


Figure 4-15. Location of Active WTP Facilities in Subwatershed 051302020101. More information, including the names of facilities, is provided in Appendix IV.

4.2.A.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	
Sumner	22,296	45,116	1,515	50	2,500	189

Table 4-5. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7
Sumner	88.2	88.2	2	6.3

Table 4-6. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Other Cropland not Planted	19.23
Soybeans (Row Crops)	14.98
Corn (Row Crops)	12.32
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Conservation Reserve Program Land	0.26
Legume Grass (Hayland)	0.23
Legume (Hayland)	0.12
Grass (Hayland)	0.08

Table 4-7. Annual Estimated Total Soil Loss in Subwatershed 051302020101.

4.2.B. 051302020102 (Madison Creek).

4.2.B.i. General Description.

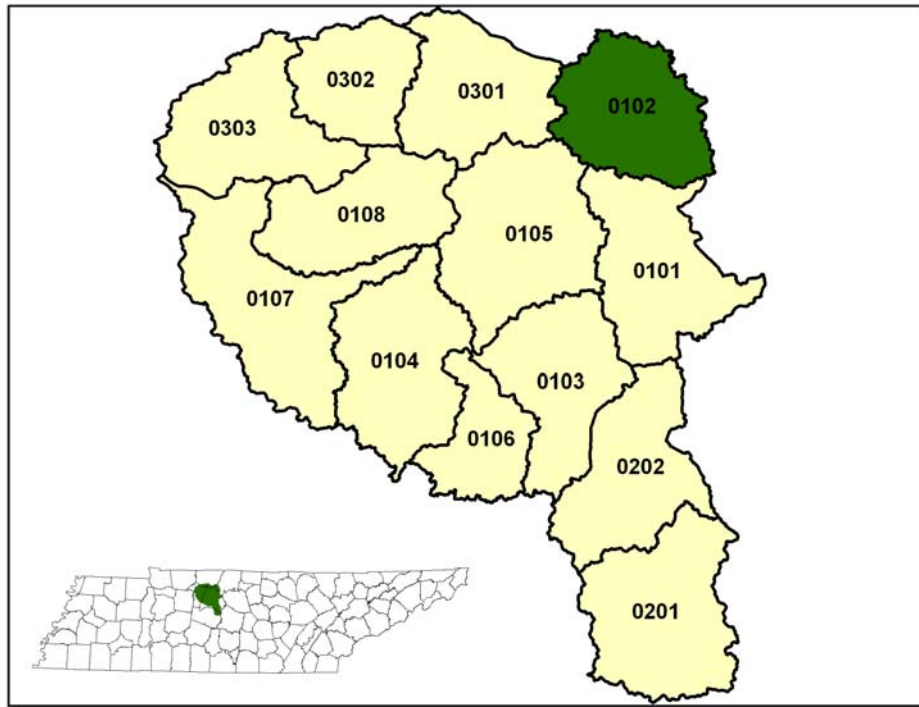


Figure 4-16. Location of Subwatershed 051302020102. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

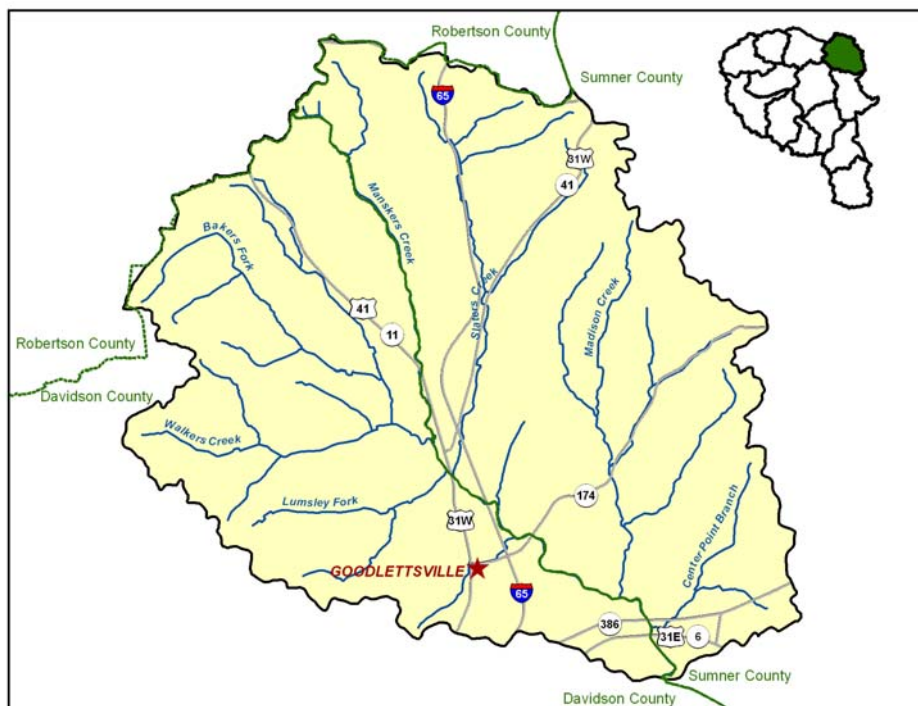


Figure 4-17. Locational Details of Subwatershed 051302020102.

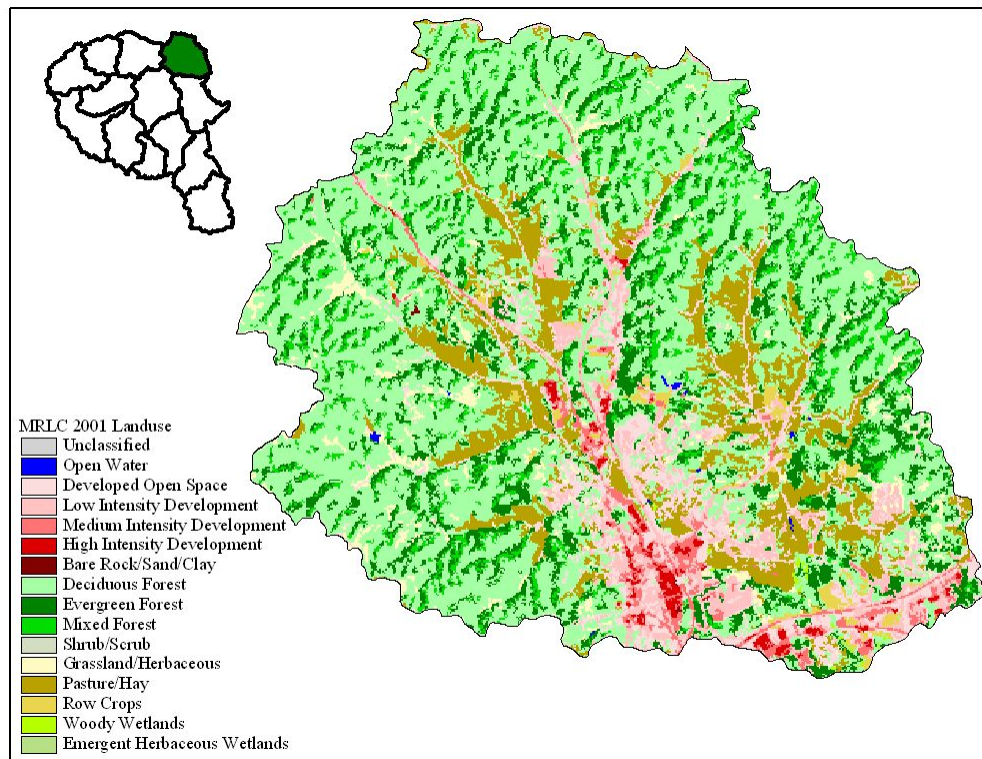


Figure 4-18. Illustration of Land Use Distribution in Subwatershed 051302020102.

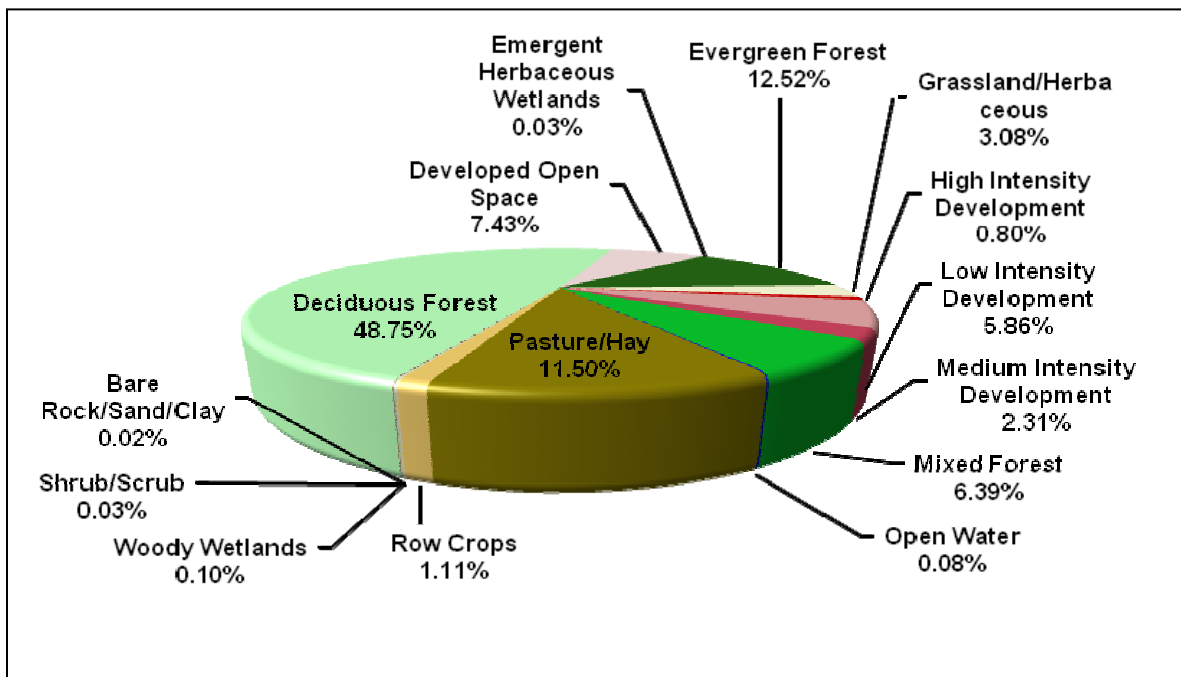


Figure 4-19. Land Use Distribution in Subwatershed 051302020102. More information is provided in Appendix IV.

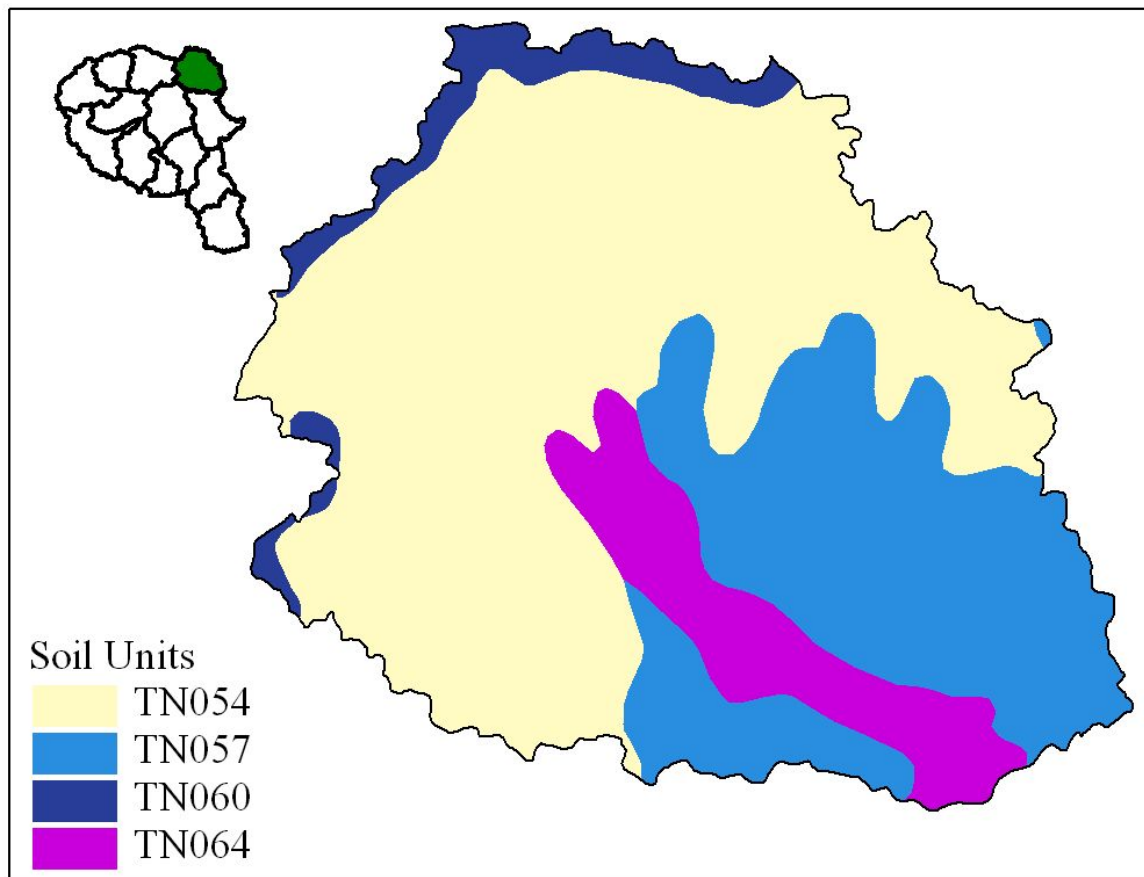


Figure 4-20. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020102.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37

Table 4-8. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020102. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Davidson	510,784	535,032	569,891	4.40	22,487	23,554	25,089	11.60
Robertson	41,494	51,533	54,433	0.36	151	188	199	31.80
Sumner	103,281	121,936	130,449	3.89	4,022	4,749	5,081	26.30
Totals	655,559	708,501	754,773		26,660	28,491	30,369	13.90

Table 4-9. Population Estimates in Subwatershed 051302020102.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Goodlettsville	Sumner	11,219	4,761	4,263	489	9
Hendersonville	Sumner	32,188	12,472	8,395	4,069	8
Millersville	Sumner	2,544	1,033	849	180	4
Ridgetop	Robertson	1,129	396	7	389	0
Goodlettsville	Davidson	11,219	4,761	4,263	489	9
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		546,817	242,944	221,417	21,192	335

Table 4-10. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020102.

4.2.B.ii. USGS Gaging Stations and STORET Sites.

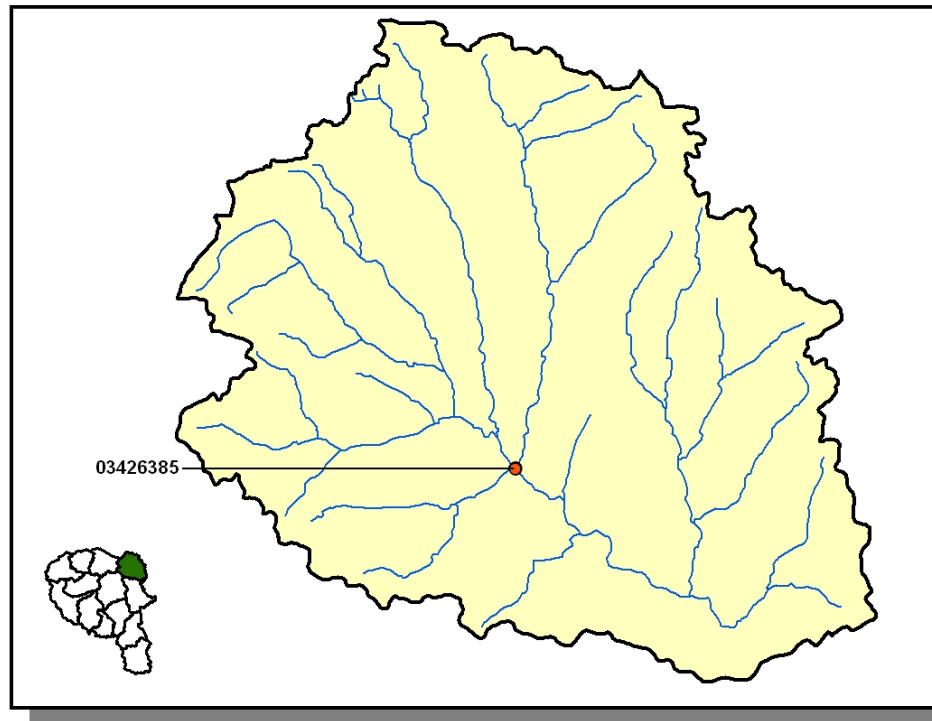


Figure 4-21. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020102. More information is provided in Appendix IV.

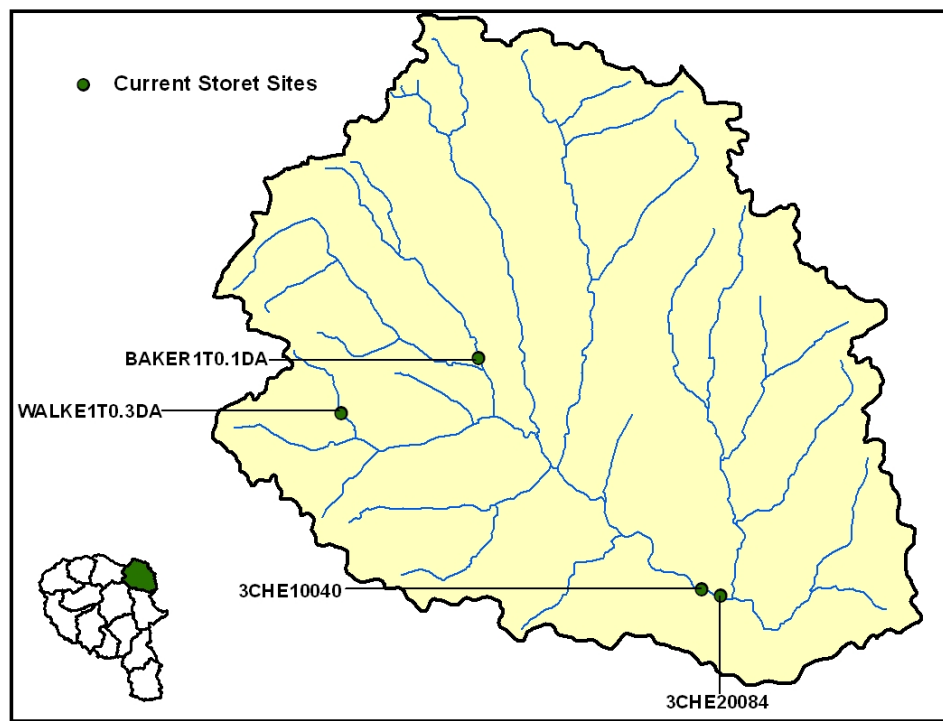


Figure 4-22. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020102. More information, including site names and locations, is provided in Appendix IV.

4.2.B.iii. Permitted Activities.

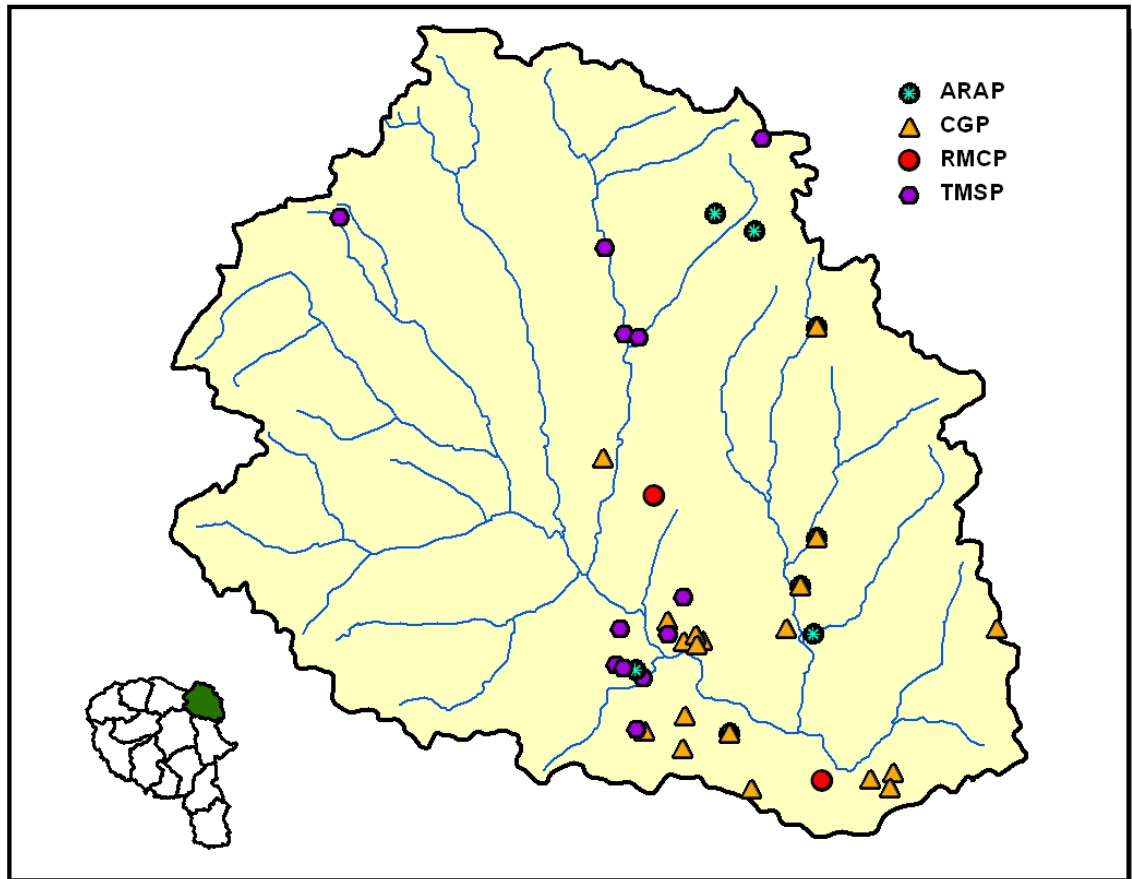


Figure 4-23. Location of Permits Issued in Subwatershed 051302020102. More information, including the names of facilities, is provided in Appendix IV.

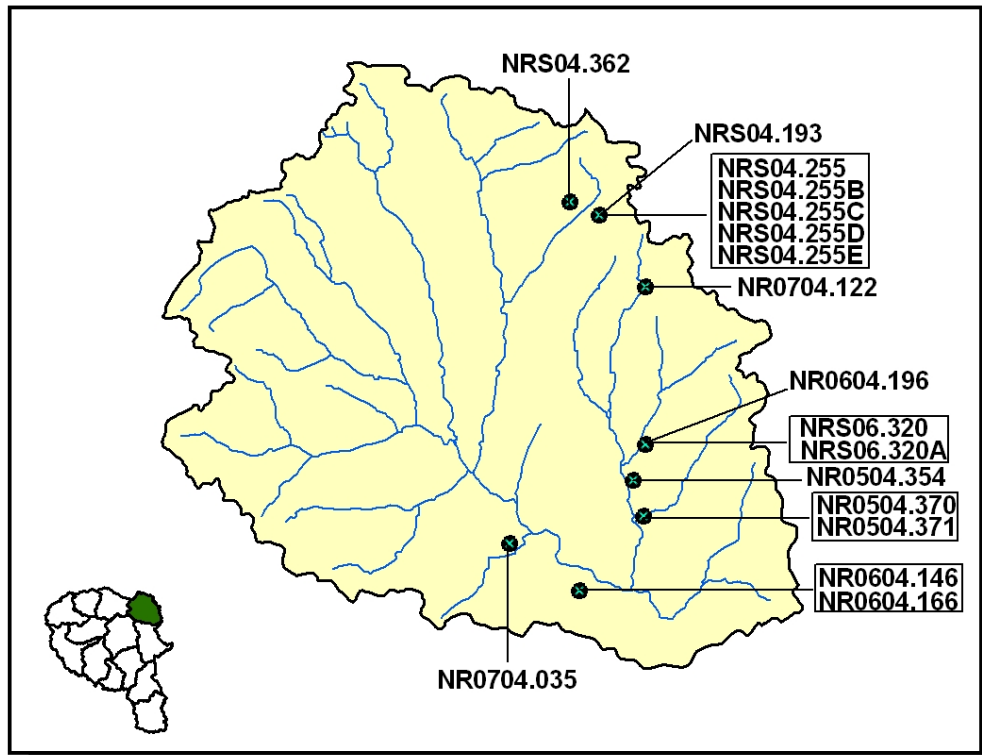


Figure 4-24. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020102. More information is provided in Appendix IV.

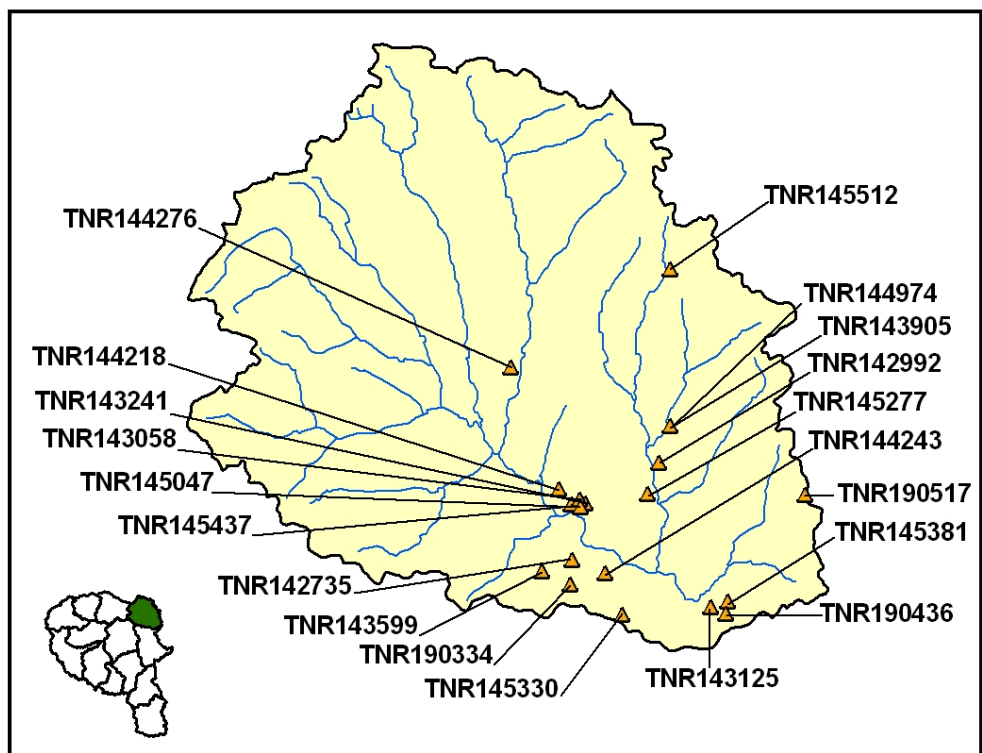


Figure 4-25. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020102. More information is provided in Appendix IV.

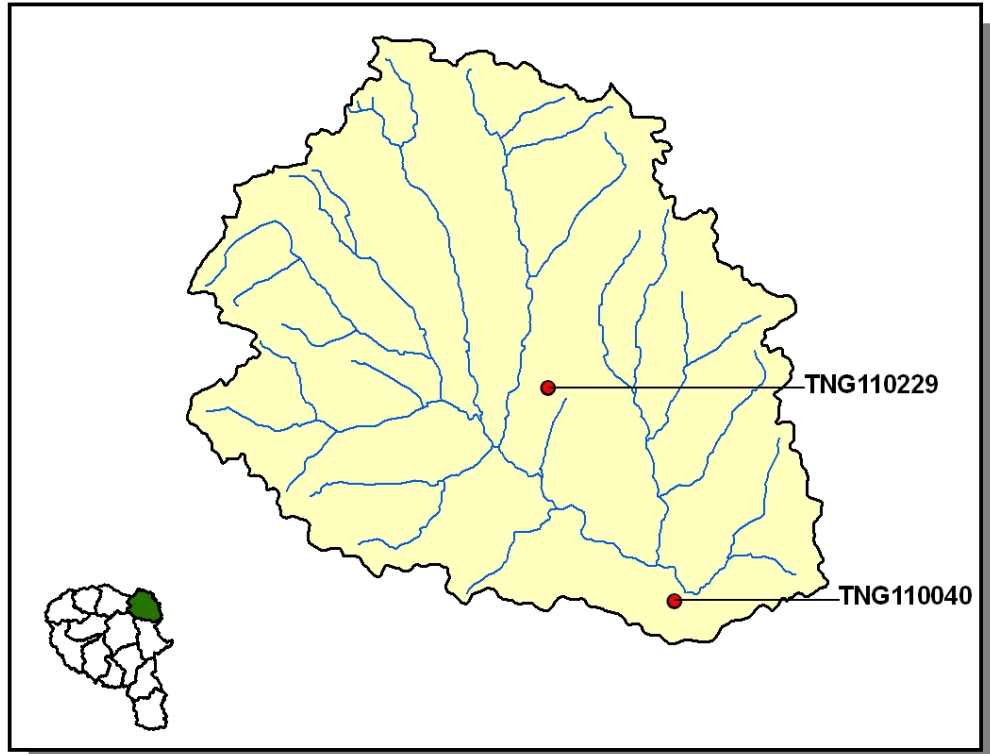


Figure 4-26. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020102. More information, including the names of facilities, is provided in Appendix IV.

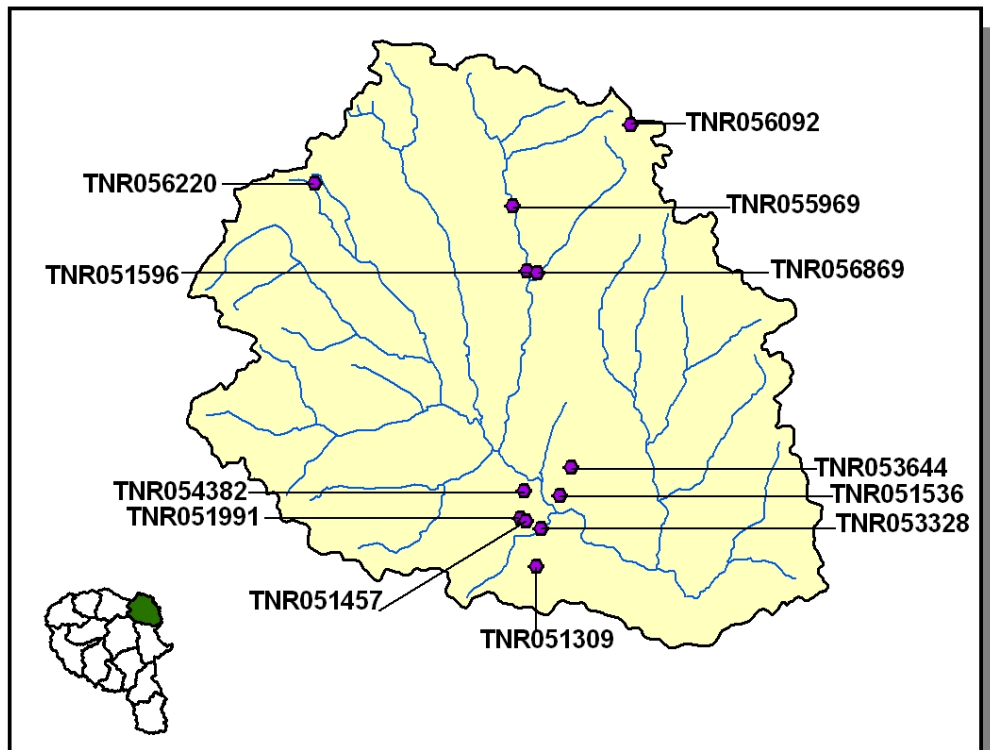


Figure 4-27. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020102. More information is provided in Appendix IV.

4.2.B.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	
Robertson	22,502	47,887	3,478	31	6,982	279
Sumner	22,296	45,116	1,515	50	2,500	189

Table 4-11. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7
Robertson	53.0	53.0	2.2	9.7
Sumner	88.2	88.2	2.0	6.3

Table 4-12. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Other Cropland not Planted	18.49
Soybeans (Row Crops)	13.08
Tobacco (Row Crops)	11.87
Corn (Row Crops)	11.77
All Other Close Grown Cropland	2.26
Wheat (Close Grown Cropland)	1.68
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.46
Farmsteads and Ranch Headquarters	0.36
Conservation Reserve Program Land	0.27
Other Land in Farms	0.27
Legume Grass (Hayland)	0.25
Grass (Hayland)	0.20
Legume (Hayland)	0.17

Table 4-13. Annual Estimated Total Soil Loss in Subwatershed 051302020102.

4.2.C. 051302020103 (Cumberland River).

4.2.C.i. General Description.

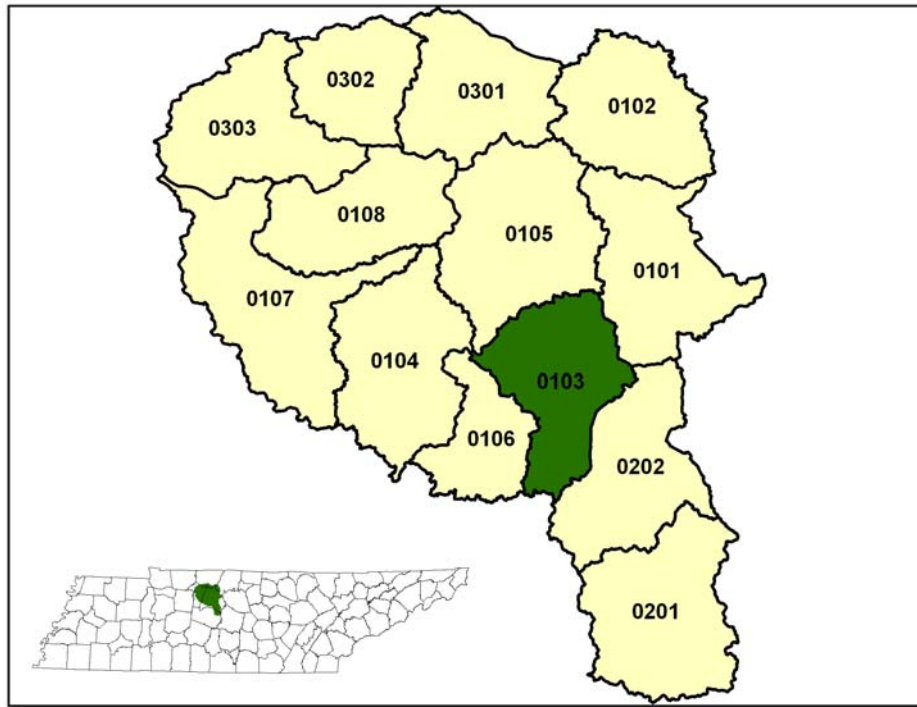
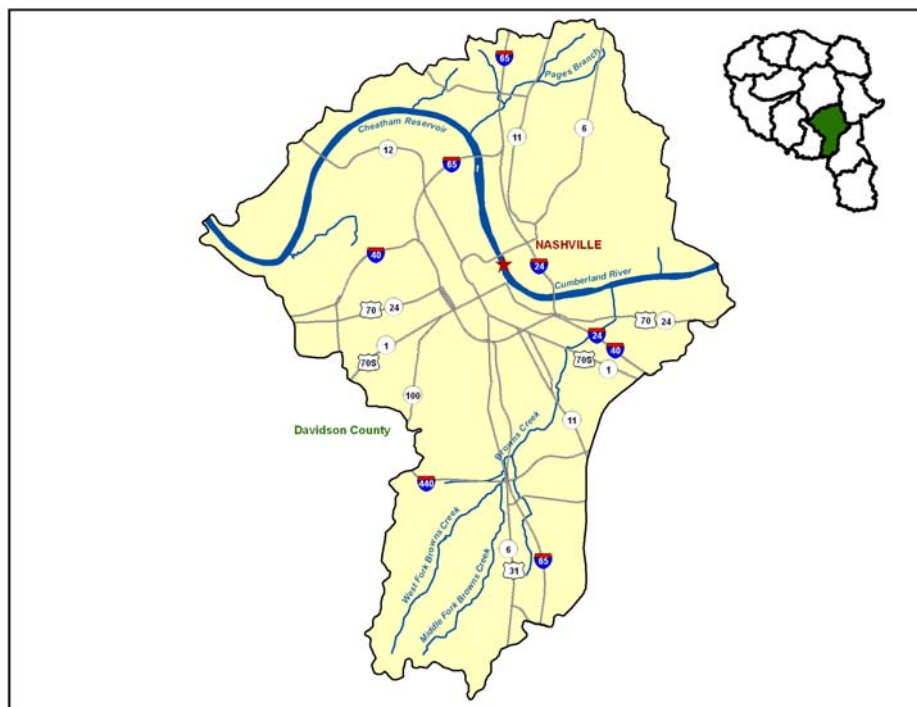


Figure 4-28. Location of Subwatershed 051302020103. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.



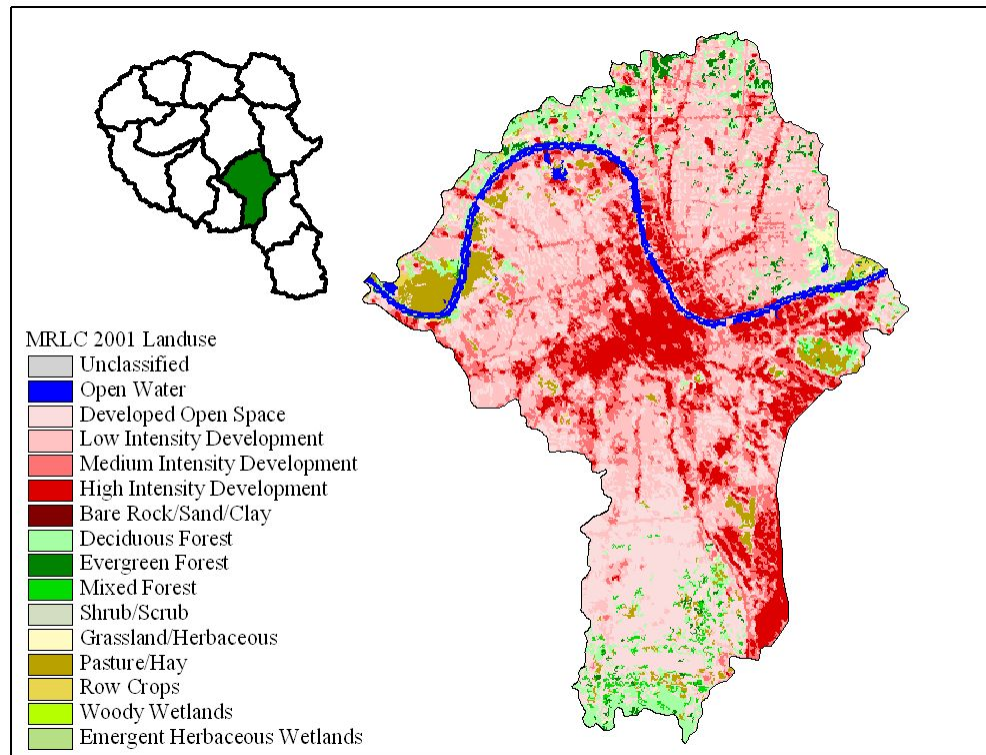


Figure 4-30. Illustration of Land Use Distribution in Subwatershed 051302020103.

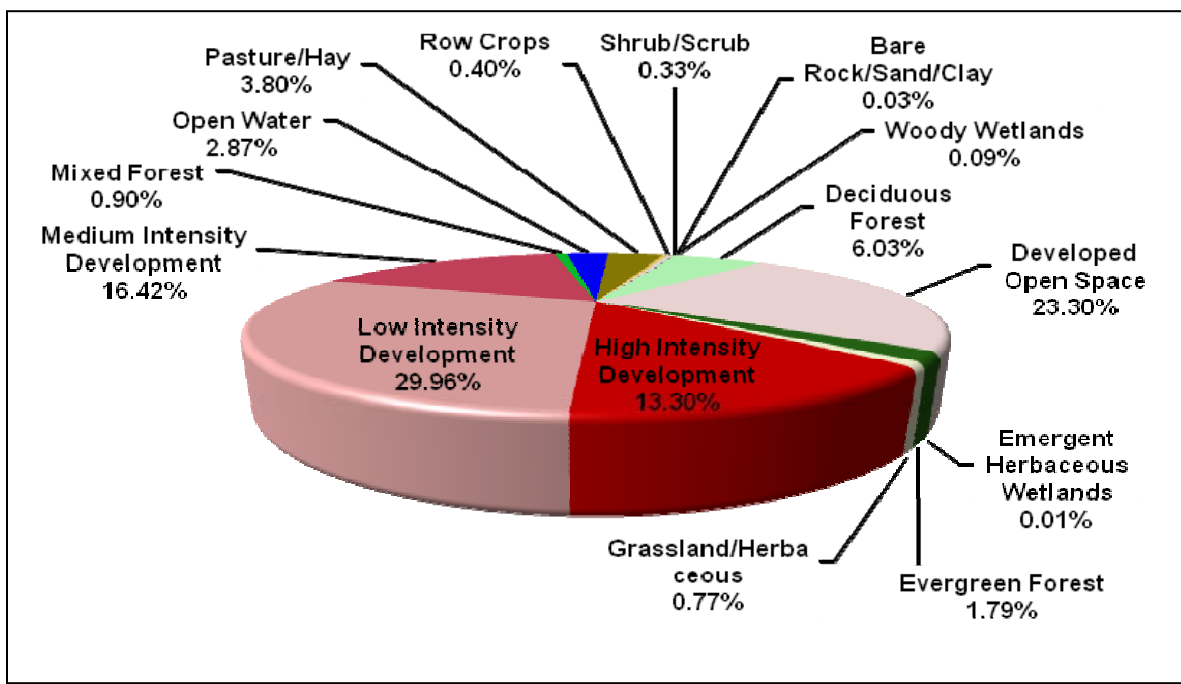


Figure 4-31. Land Use Distribution in Subwatershed 051302020103. More information is provided in Appendix IV.

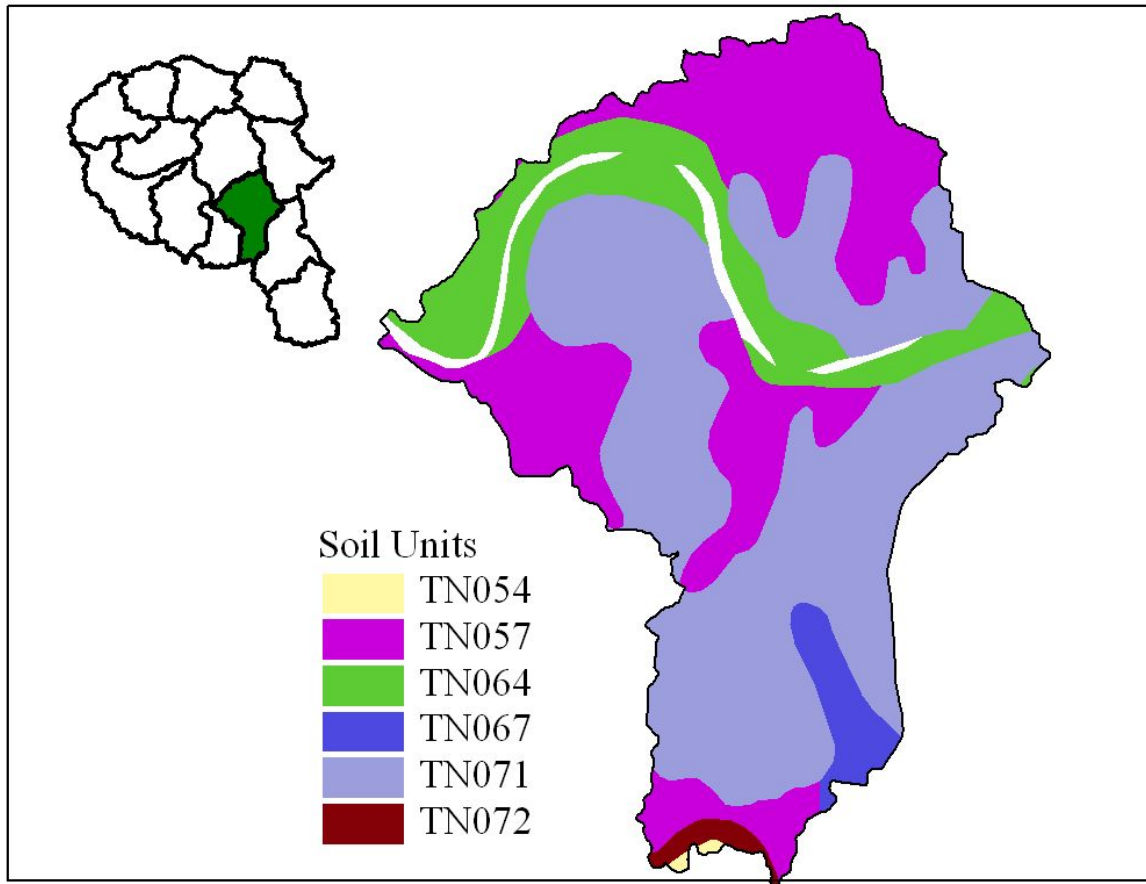


Figure 4-32. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020103.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN067	2.00	C	2.69	5.51	Silty Loam	0.35
TN071	0.00	C	2.37	5.70	Silty Loam	0.33
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-14. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020103. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Davidson	510,784	535,032	569,891	9.01	46,042	48,227	51,370	11.60

Table 4-15. Population Estimates in Subwatershed 051302020103.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Berry Hill	Davidson	803	498	486	12	0
Forest Hills	Davidson	4,240	1,601	625	976	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Oak Hill	Davidson	4,301	1788	990	798	0
Total		497,862	223,408	205,741	17,362	305

Table 4-16. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020103.

4.2.C.ii. USGS Gaging Stations and STORET Sites.

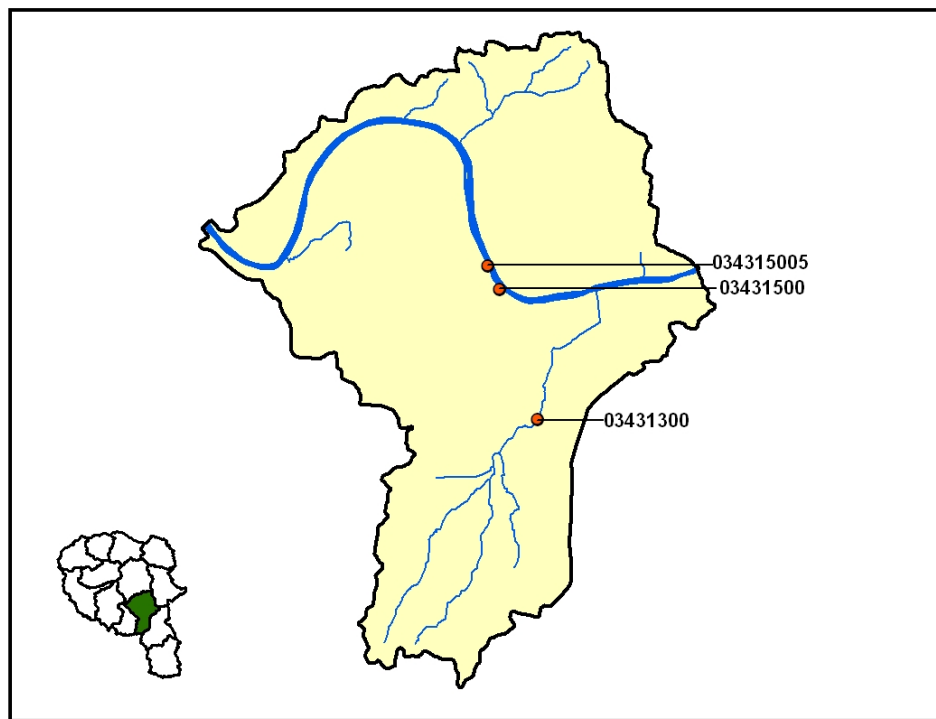


Figure 4-33. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020103. More information is provided in Appendix IV.

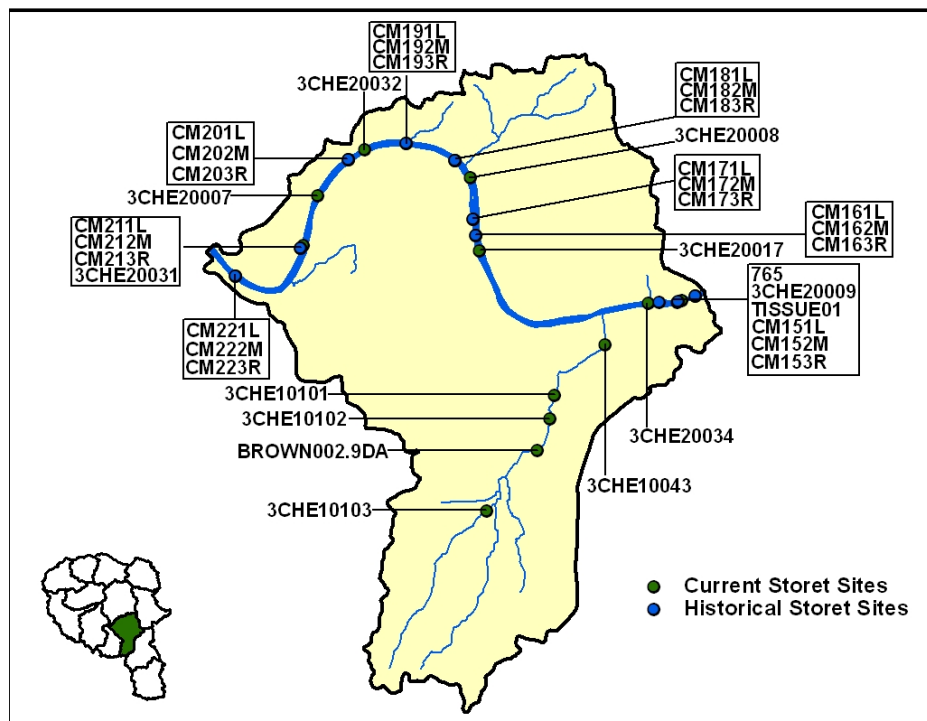


Figure 4-34. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020103. More information, including site names and locations, is provided in Appendix IV.

4.2.C.iii. Permitted Activities.

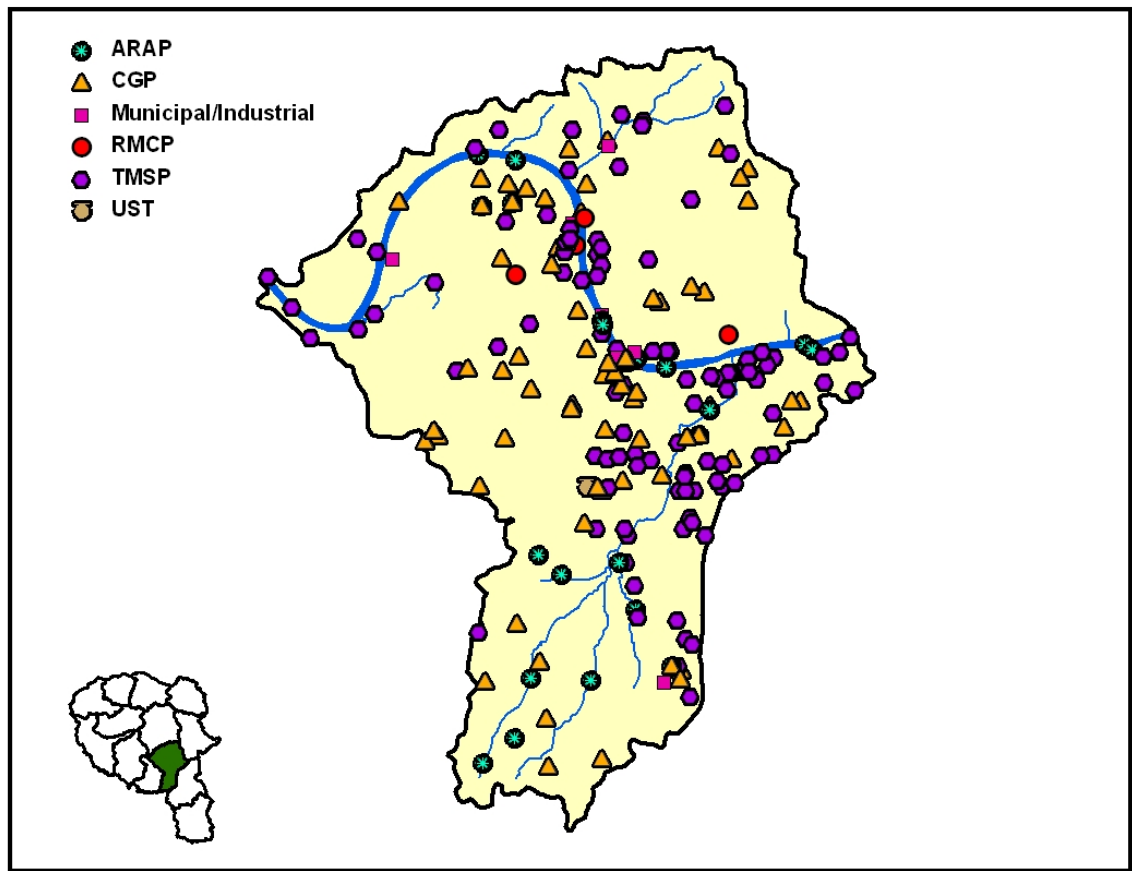


Figure 4-35. Location of Permits Issued in Subwatershed 051302020103. More information, including the names of facilities, is provided in Appendix IV.

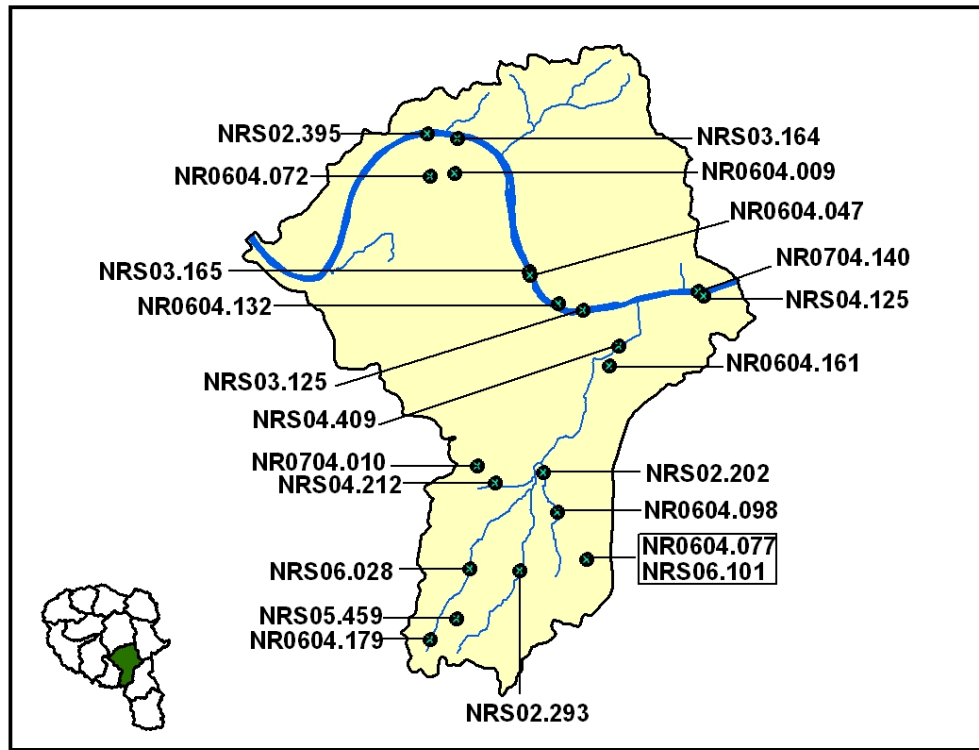


Figure 4-36. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020103. More information is provided in Appendix IV.

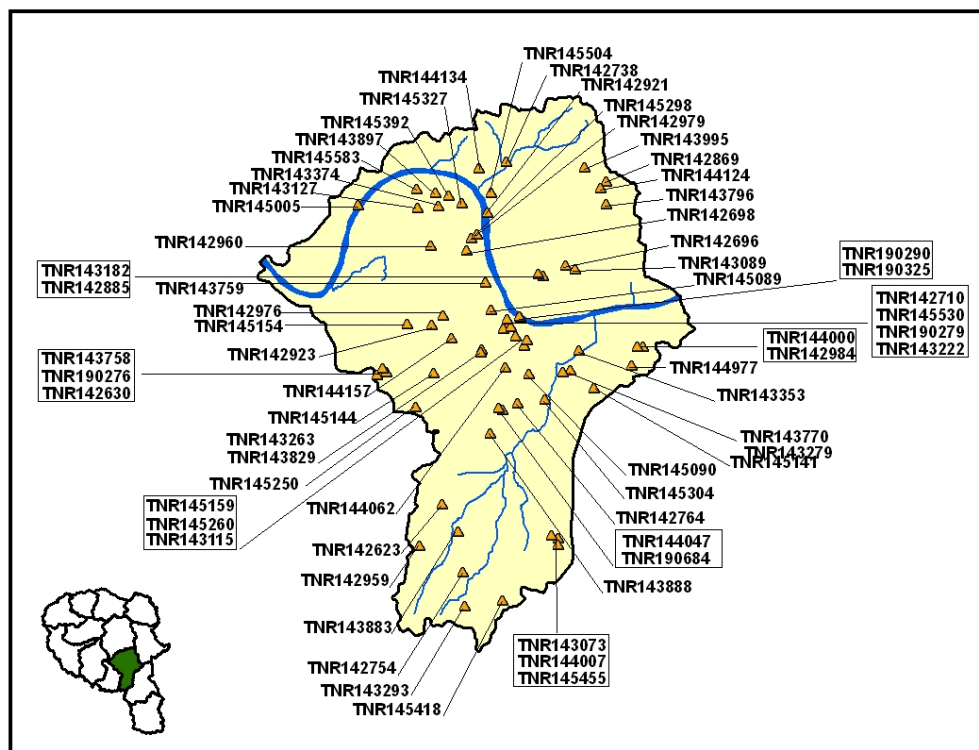


Figure 4-37. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020103. More information is provided in Appendix IV.

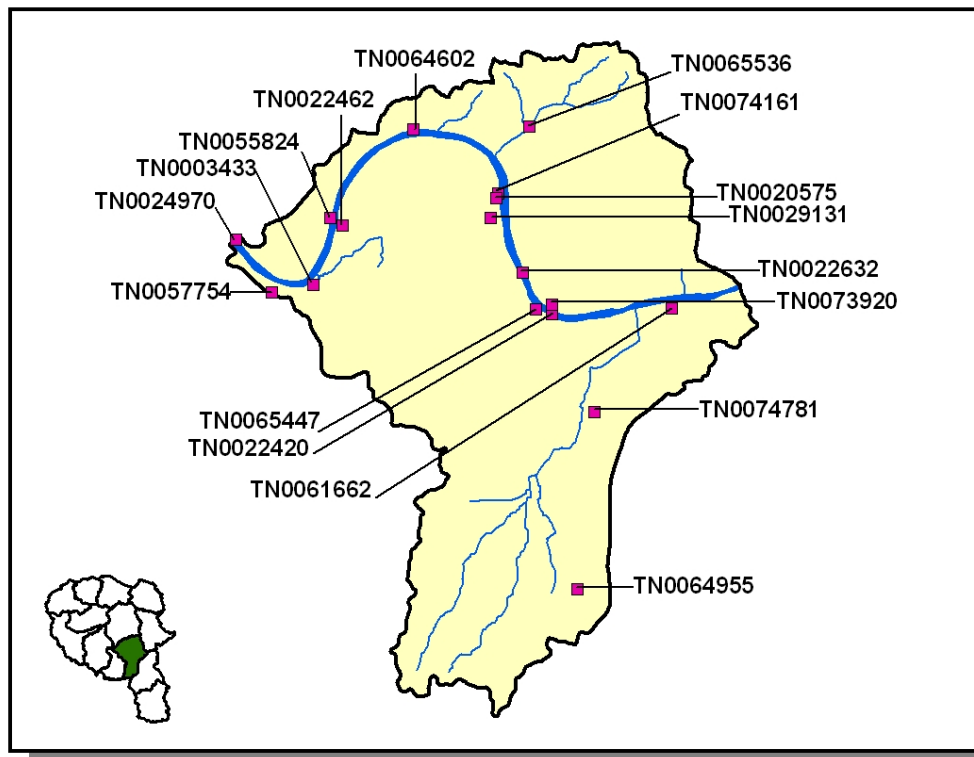


Figure 4-38. Location of permitted MUNICIPAL and INDUSTRIAL facilities in subwatershed 051302020103. More information, including the name of the facility is provided in Appendix IV.

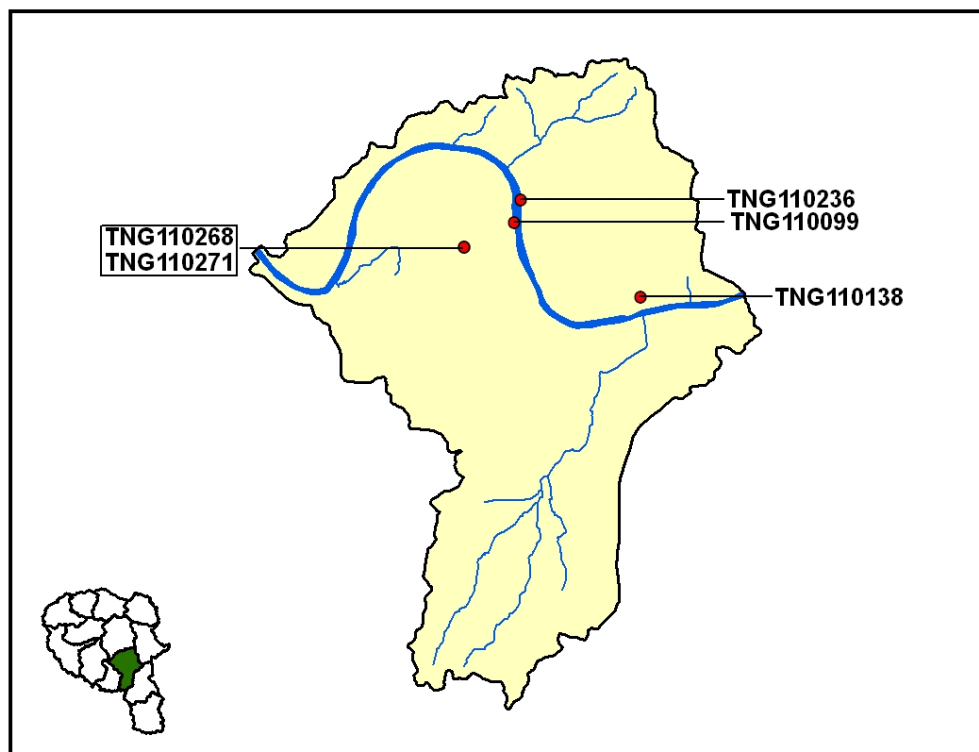


Figure 4-39. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020103. More information, including the names of facilities, is provided in Appendix IV.

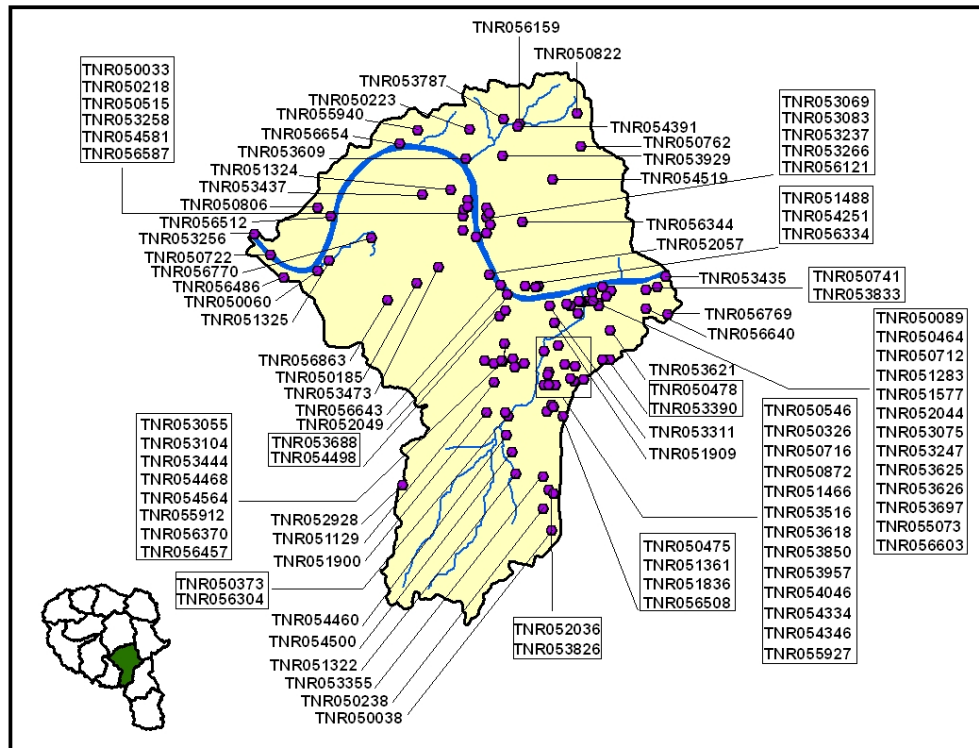


Figure 4-40. Location of TNSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020103. More information is provided in Appendix IV.

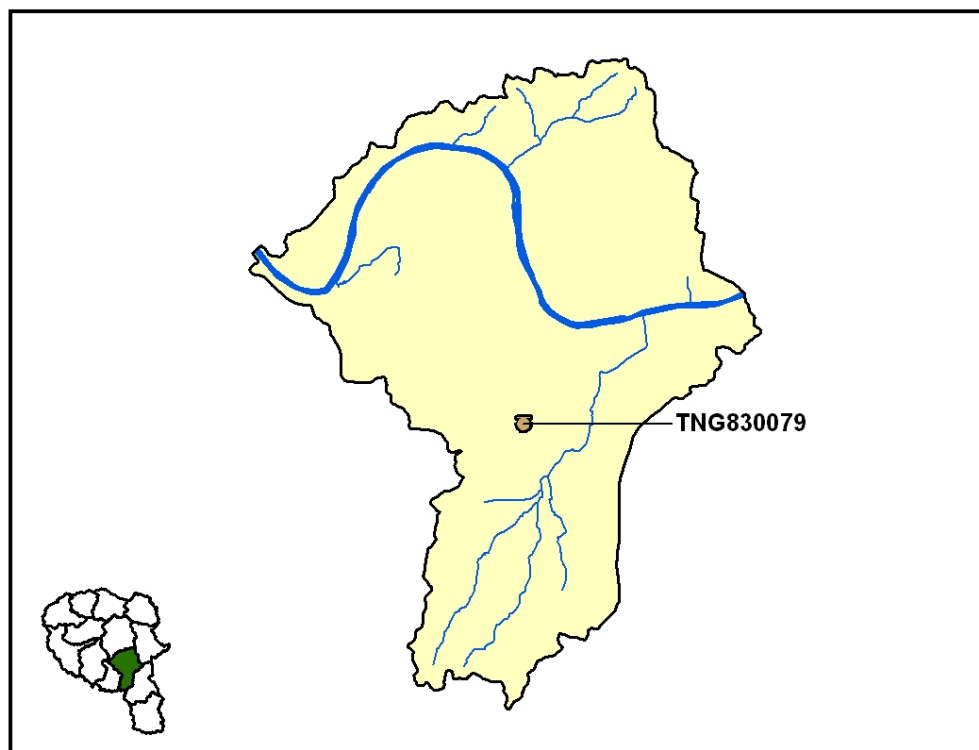


Figure 4-41. Location of Active UST Sites in Subwatershed 051302020103. More information is provided in Appendix IV.

4.2.C.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,275	73	

Table 4-17. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-18. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	15.01
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Grass (Hayland)	0.07

Table 4-19. Annual Estimated Total Soil Loss in Subwatershed 051302020103.

4.2.D. 051302020104 (Cumberland River).

4.2.D.i. General Description

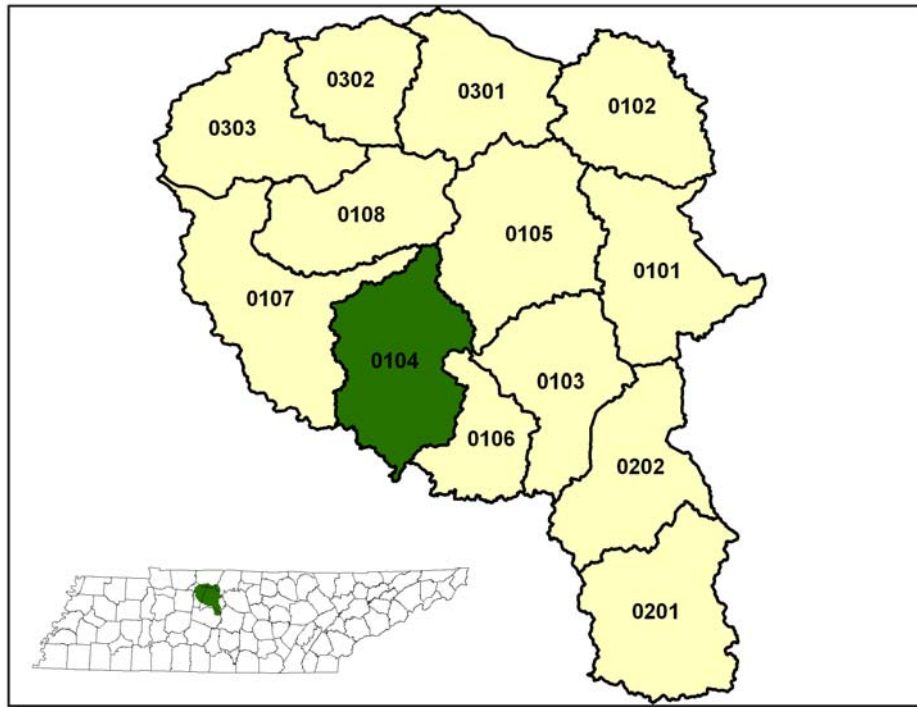


Figure 4-42. Location of Subwatershed 051302020104. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

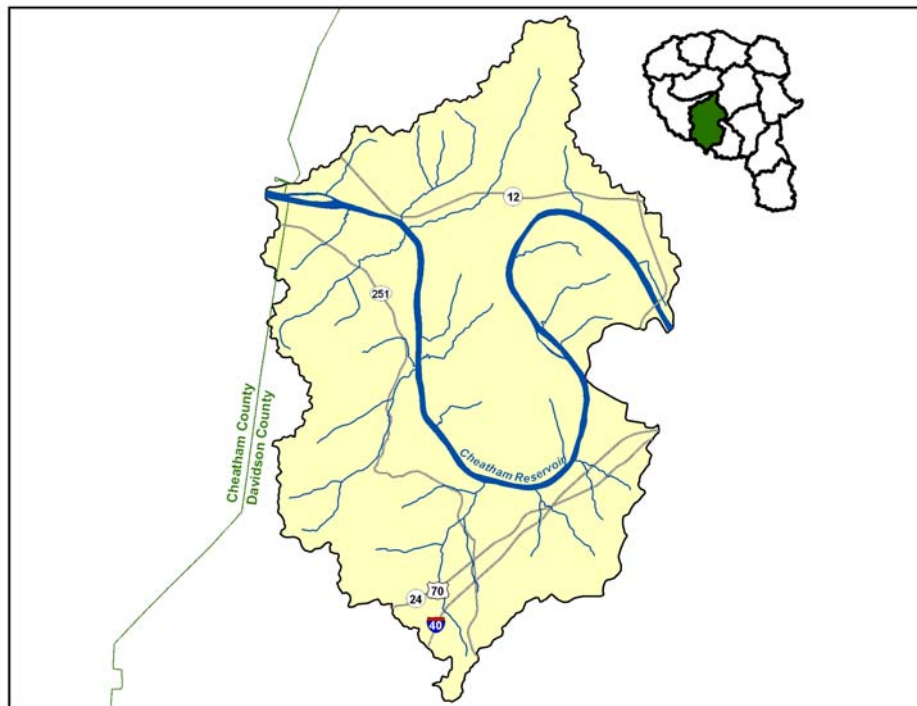


Figure 4-42. Locational Details of Subwatershed 051302020104.

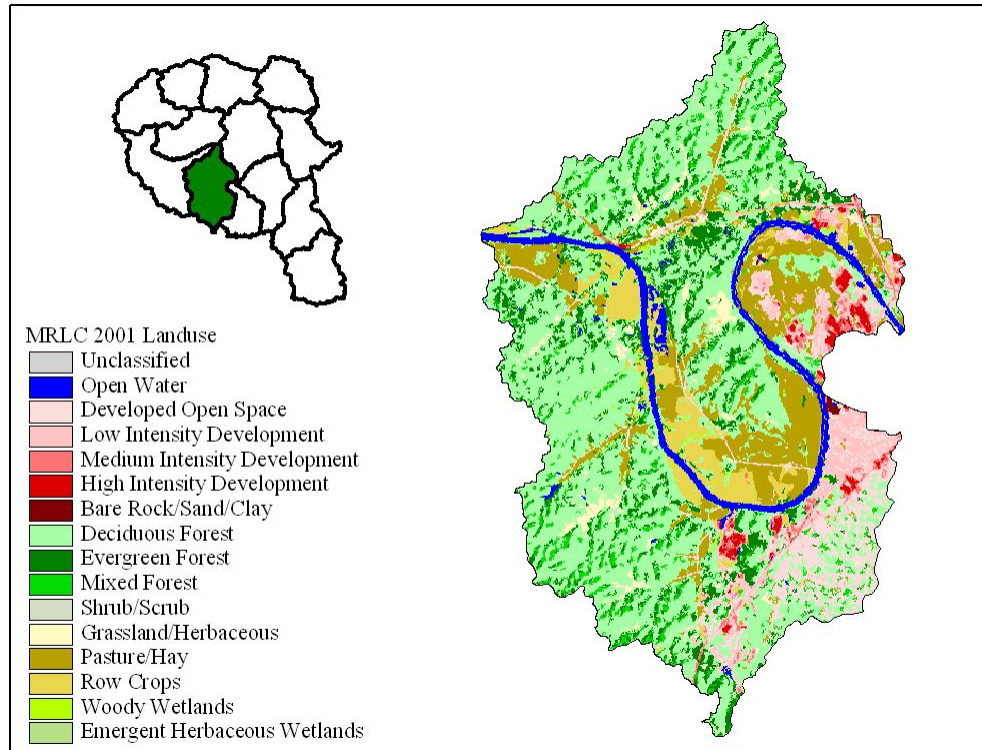


Figure 4-43. Illustration of Land Use Distribution in Subwatershed 051302020104.

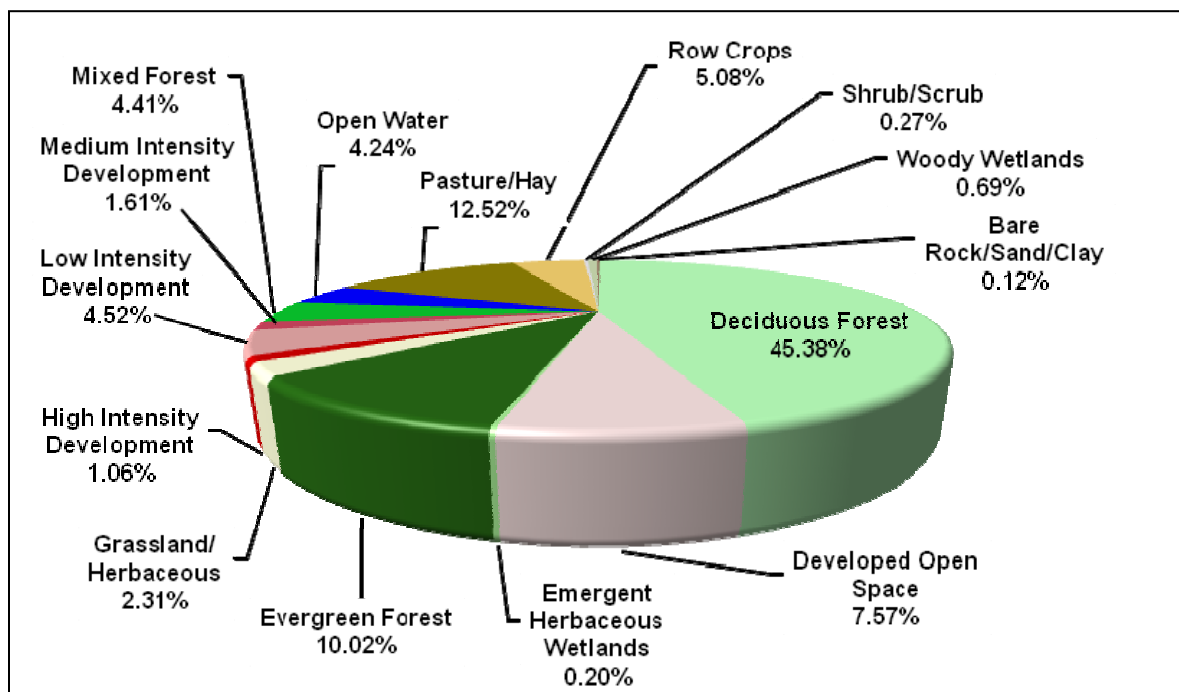


Figure 4-44. Land Use Distribution in Subwatershed 051302020104. More information is provided in Appendix IV.

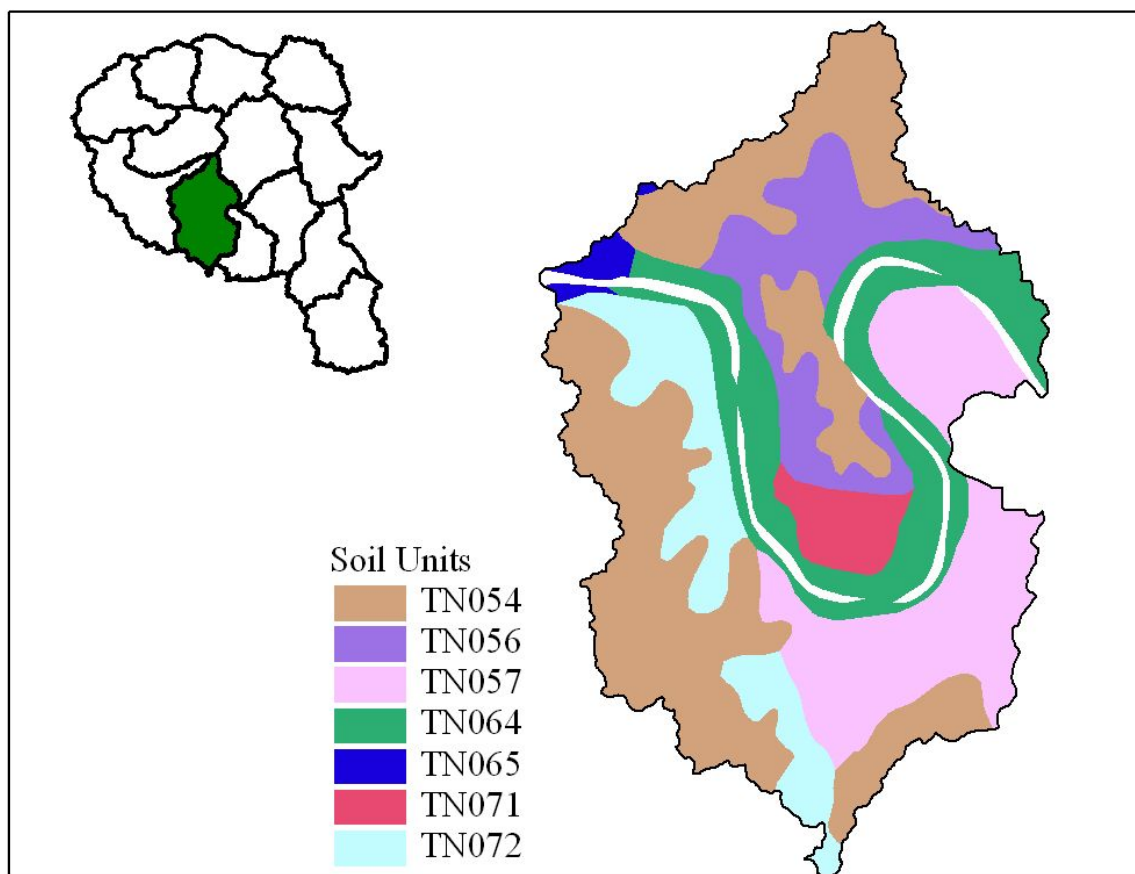


Figure 4-45. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020104.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN056	0.00	C	2.99	5.29	Sandy Clay Loam	0.25
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN065	0.00	C	1.15	5.52	Loam	0.32
TN071	0.00	C	2.37	5.70	Silty Loam	0.33
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-20. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020104. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cheatham	27,140	34,402	35,912	0.39	107	136	142	32.70
Davidson	510,784	535,032	569,891	10.35	52,884	55,395	59,004	11.60
Totals	537,924	569,434	605,803		52,991	55,531	59,146	11.60

Table 4-21. Population Estimates in Subwatershed 051302020104.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305

Table 4-22. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020104.

4.2.D.ii. USGS Gaging Stations and STORET Sites.

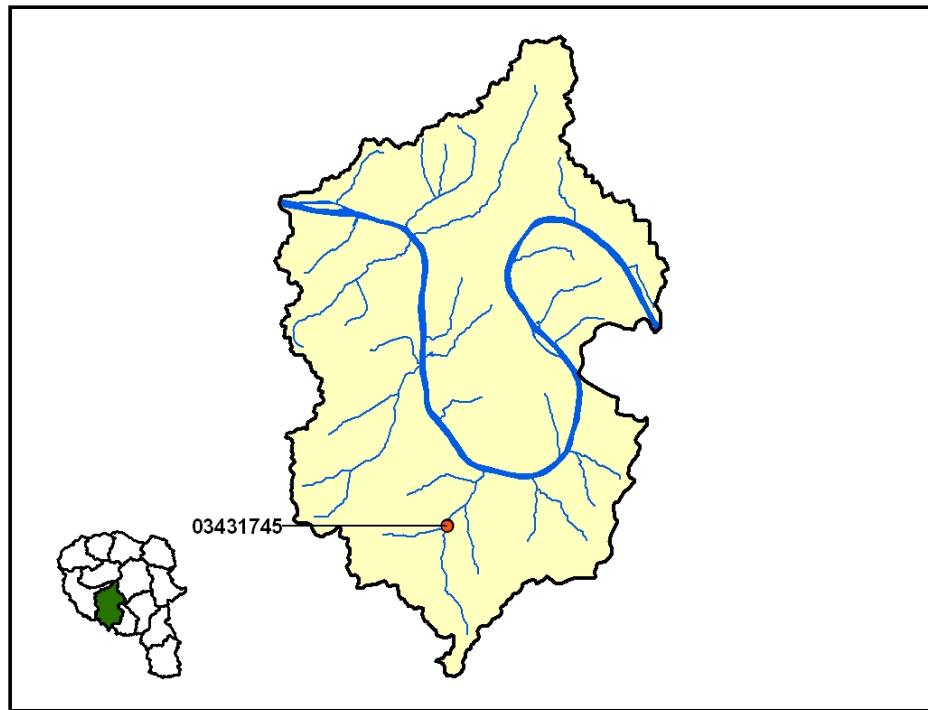


Figure 4-46. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020104. More information is provided in Appendix IV.

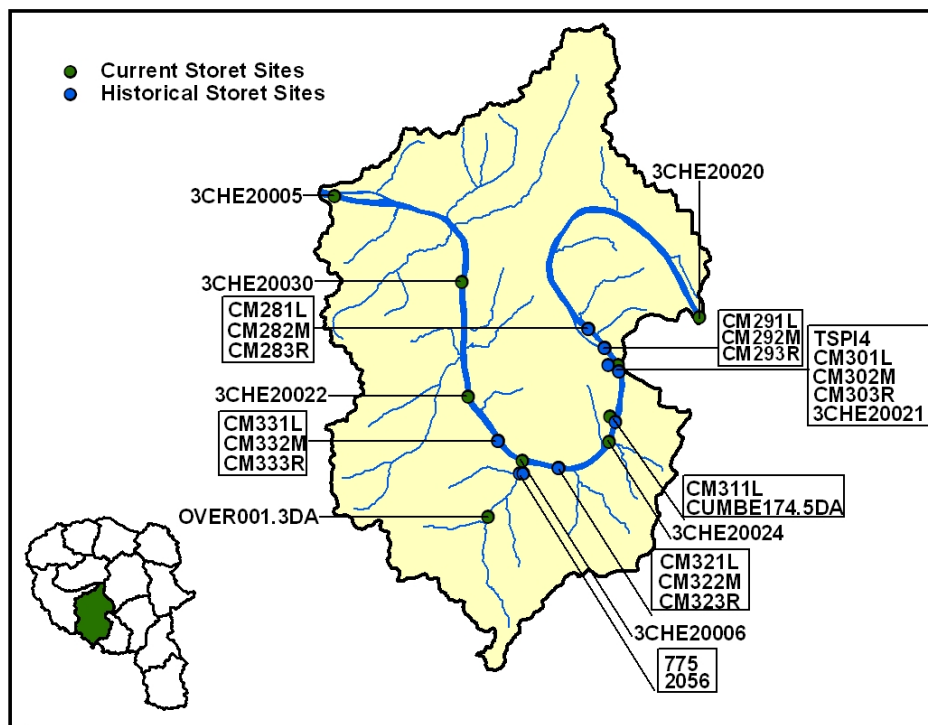


Figure 4-47. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020104. More information, including site names and locations, is provided in Appendix IV.

4.2.D.iii. Permitted Activities.

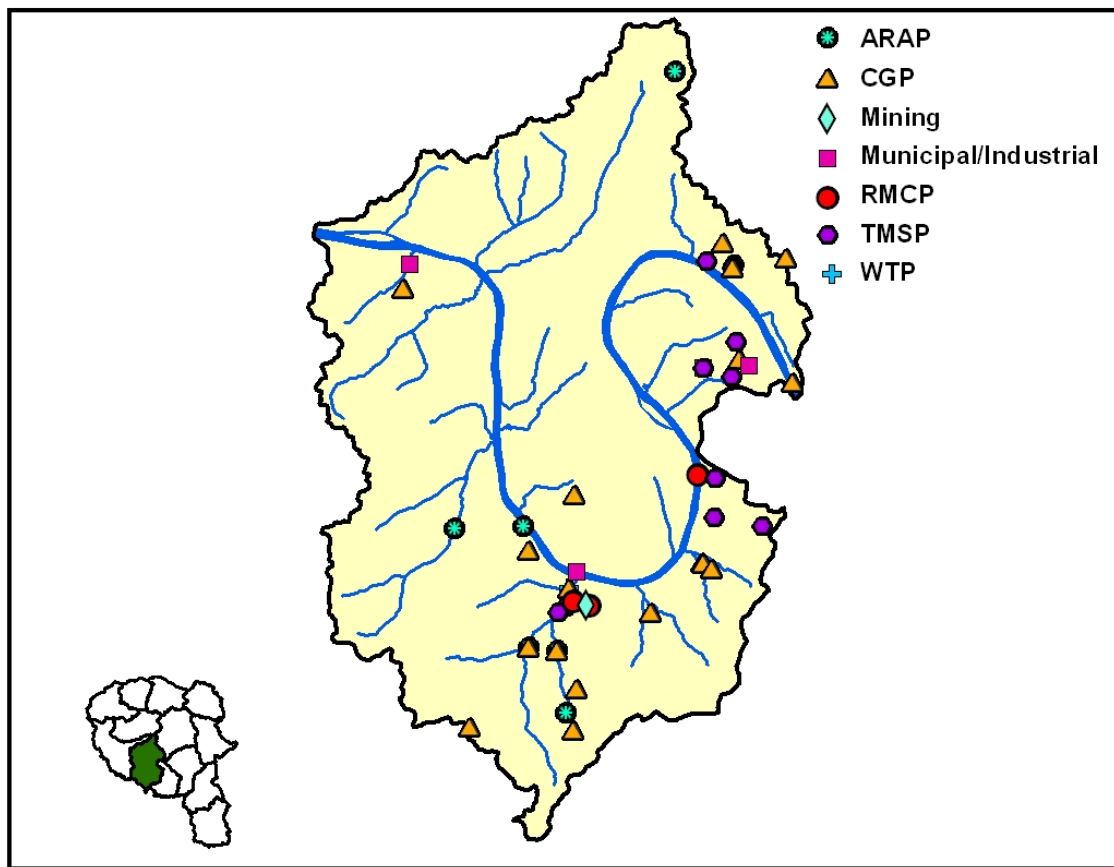


Figure 4-48. Location of Permits Issued in Subwatershed 051302020104. More information, including the names of facilities, is provided in Appendix IV.

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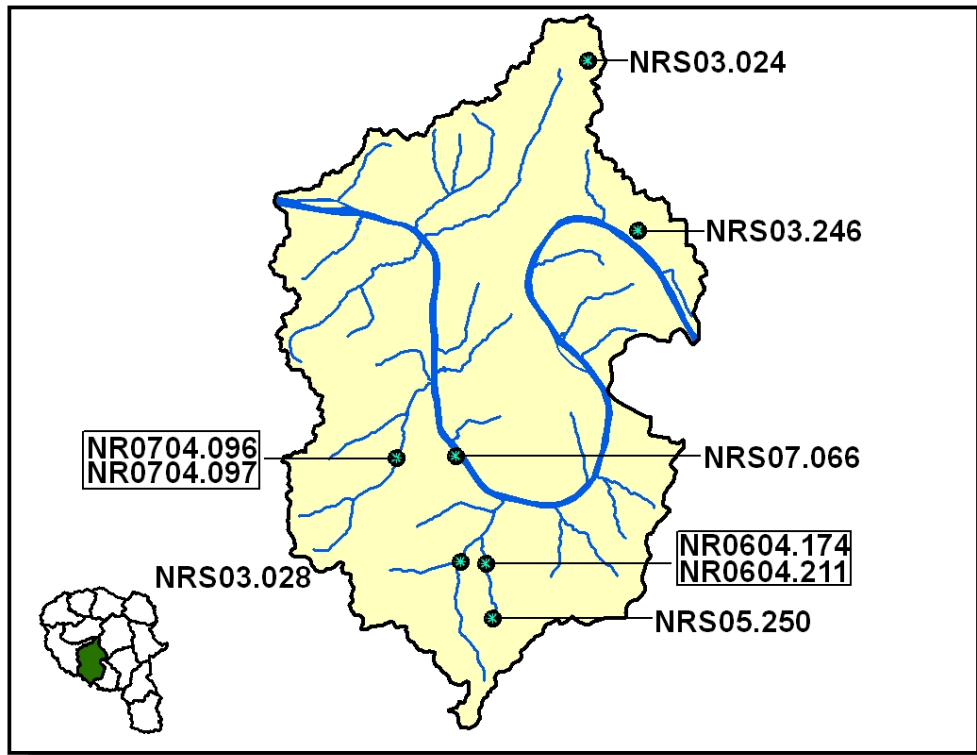


Figure 4-49. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020104. More information is provided in Appendix IV.

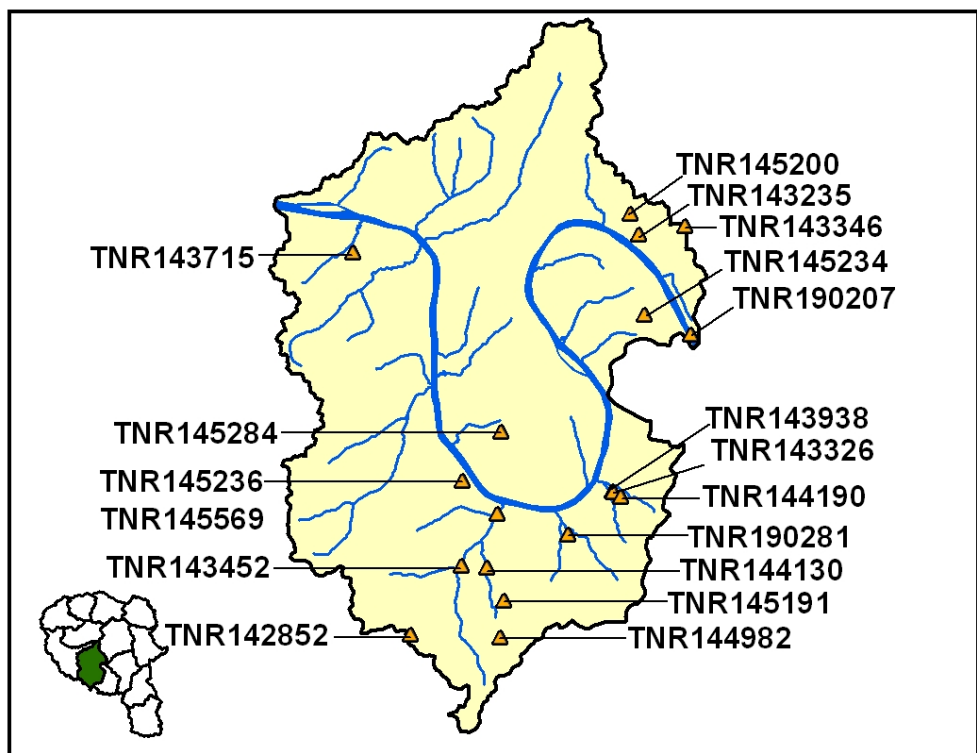


Figure 4-50. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020104. More information is provided in Appendix IV.

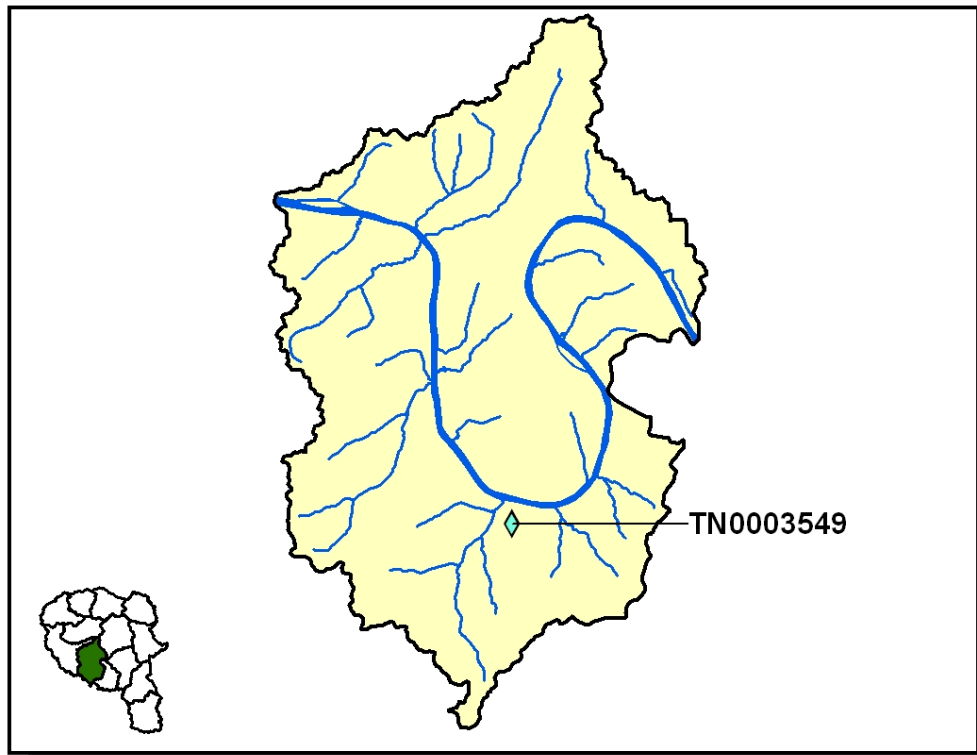


Figure 4-51. Location of permitted MINING facilities in Subwatershed 051302020104. More information is provided in Appendix IV.

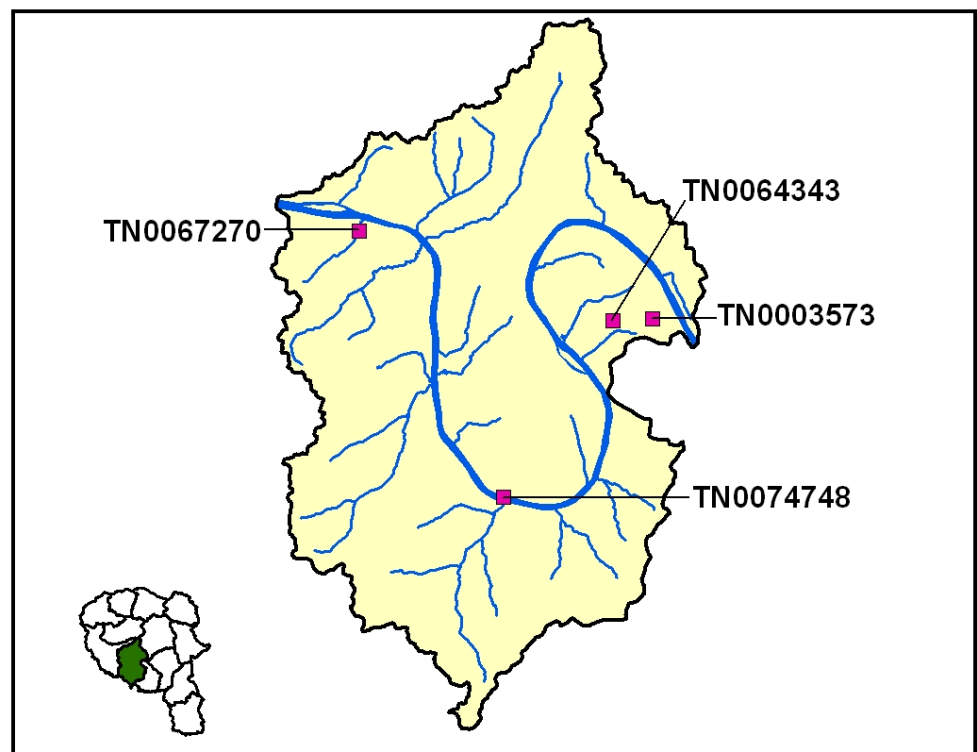


Figure 4-52. Location of permitted MUNICIPAL and INDUSTRIAL facilities in subwatershed 051302020104. More information, including the name of the facility is provided in Appendix IV.

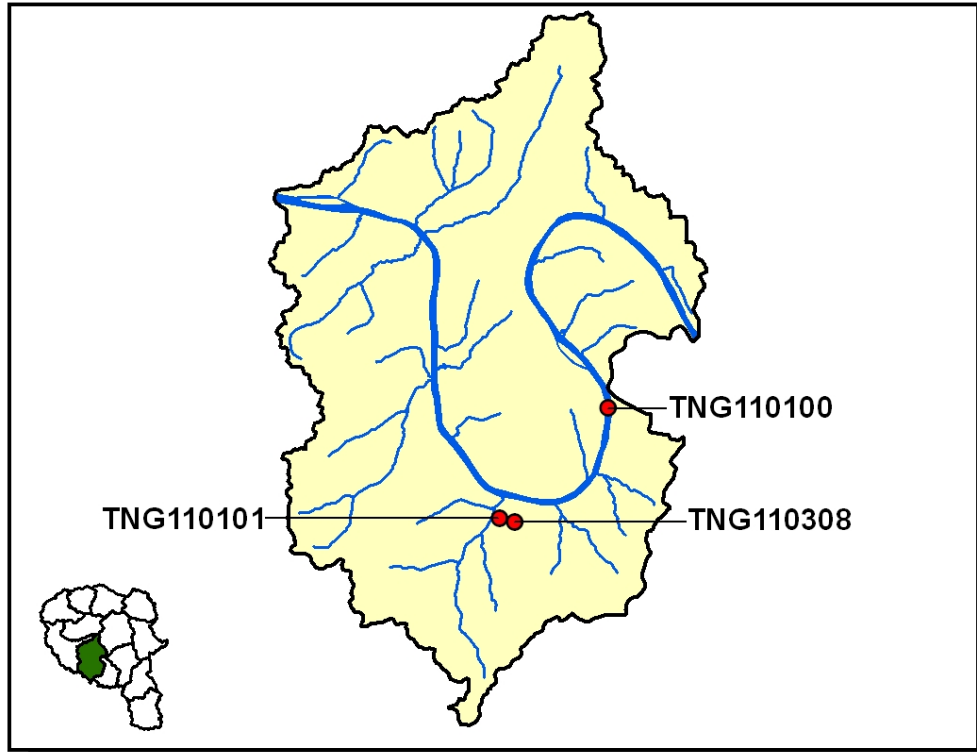


Figure 4-53. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020104. More information, including the names of facilities, is provided in Appendix IV.

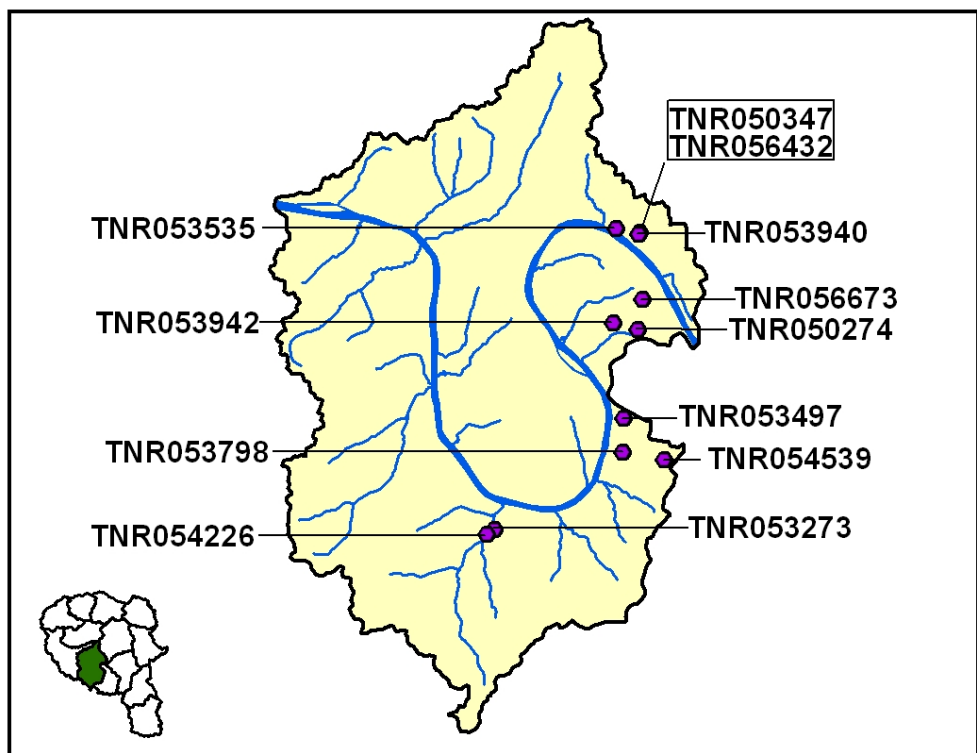


Figure 4-54. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020104. More information is provided in Appendix IV.

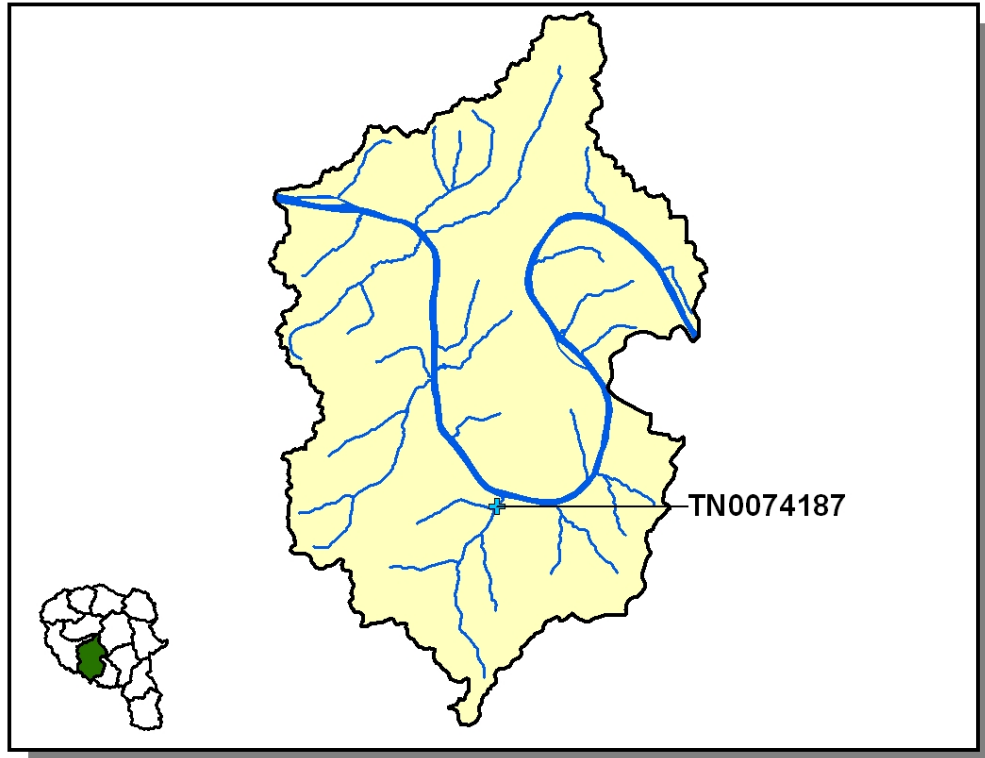


Figure 4-55. Location of Active WTP Facilities in Subwatershed 051302020104. More information, including the names of facilities, is provided in Appendix IV.

4.2.D.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Davidson		9,207		1,572	73	

Table 4-23. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

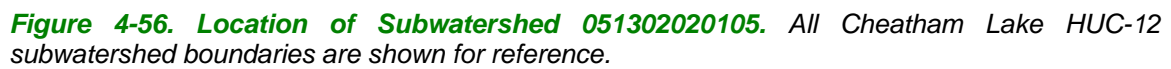
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Davidson	108.7	108.1	2.3	9.7

Table 4-24. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	14.89
Corn (Row Crops)	8.53
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.54
Other Cropland not Planted	0.52
Grass (Pastureland)	0.44
Legume (Hayland)	0.38
Farmsteads and Ranch Headquarters	0.33
Legume Grass (Hayland)	0.29
Grass (Hayland)	0.08

Table 4-25. Annual Estimated Total Soil Loss in Subwatershed 051302020104.

4.2.E.i. General Description.



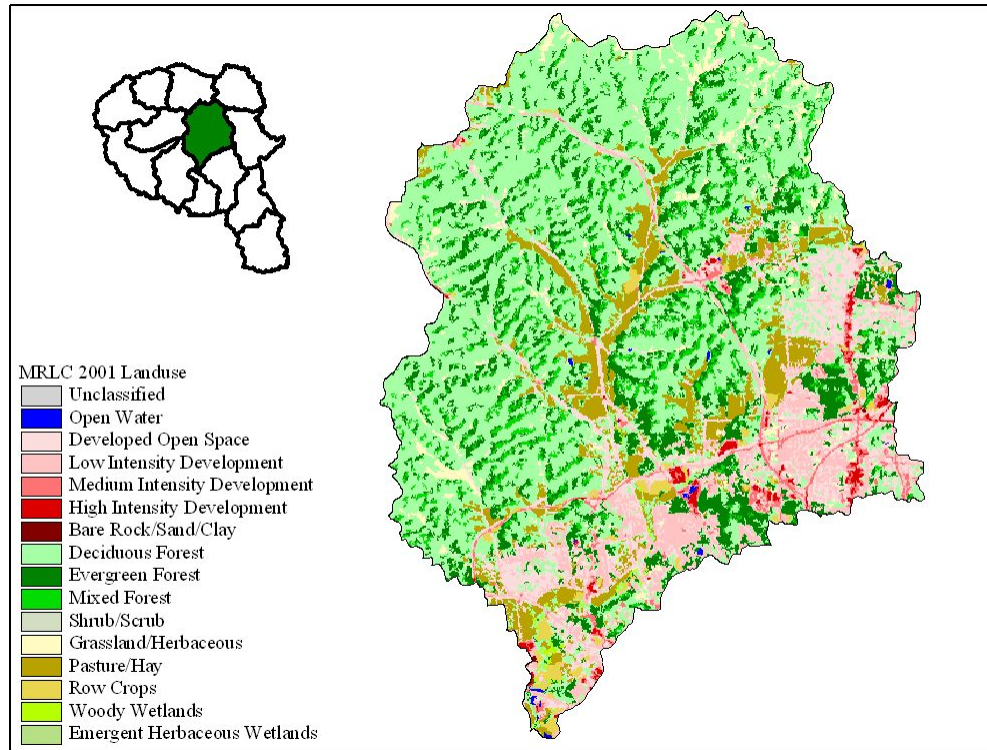


Figure 4-58. Illustration of Land Use Distribution in Subwatershed 051302020105.

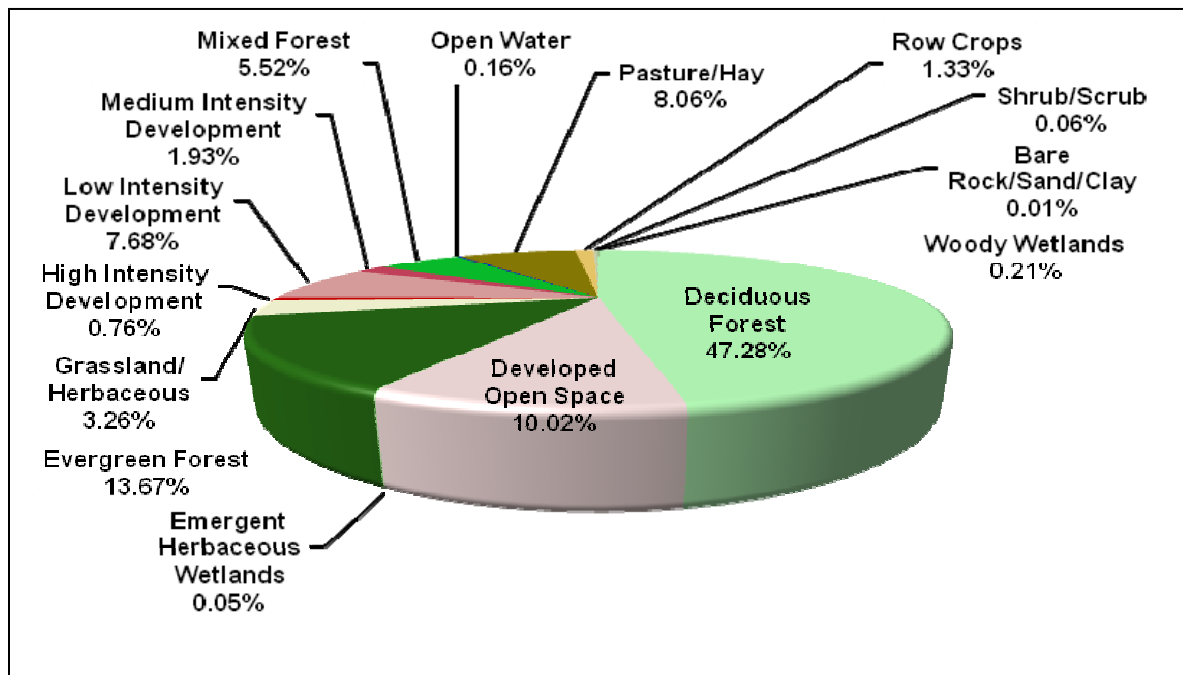


Figure 4-59. Land Use Distribution in Subwatershed 051302020105. More information is provided in Appendix IV.

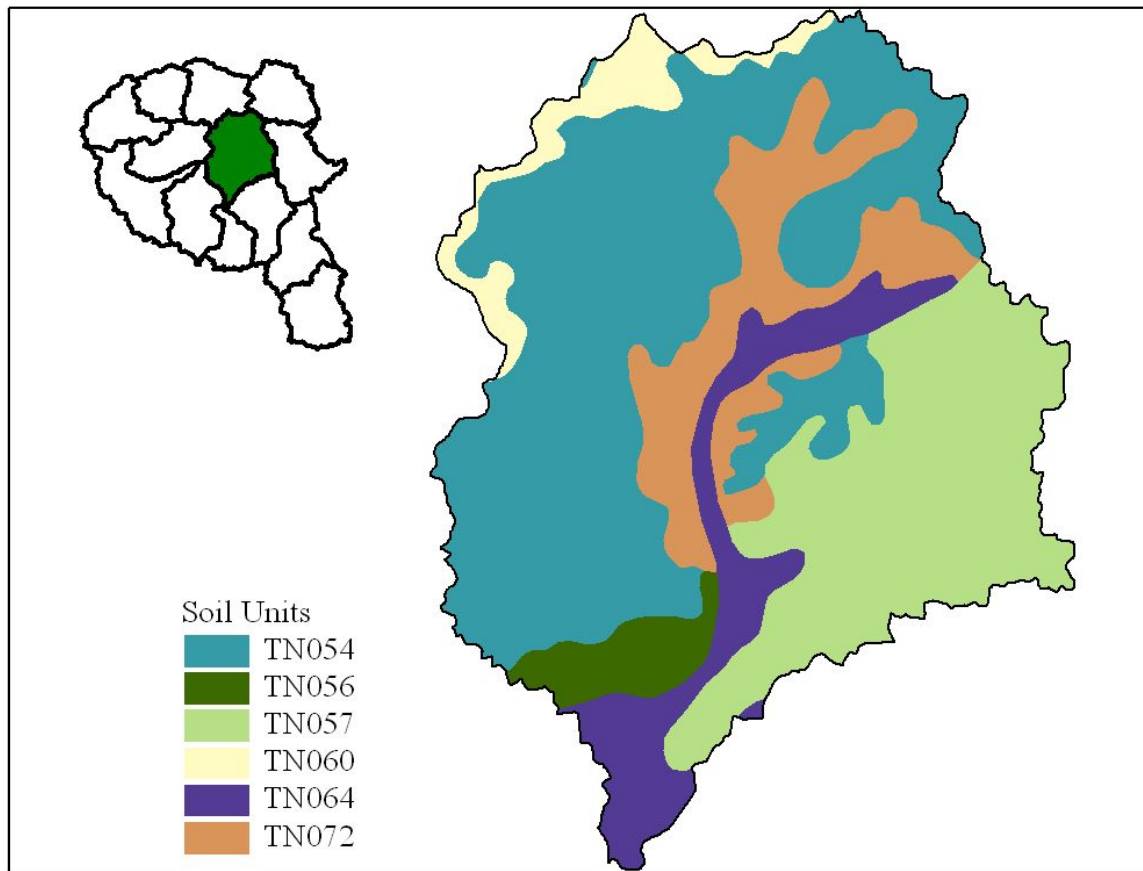


Figure 4-60. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020105.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN056	0.00	C	2.99	5.29	Sandy Clay Loam	0.25
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-26. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020105. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Davidson	510,784	535,032	569,891	12.07	61,639	64,565	68,771	11.60

Table 4-27. Population Estimates in Subwatershed 051302020105.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305

Table 4-28. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020105.

4.2.E.ii. USGS Gaging Stations and STORET Sites.

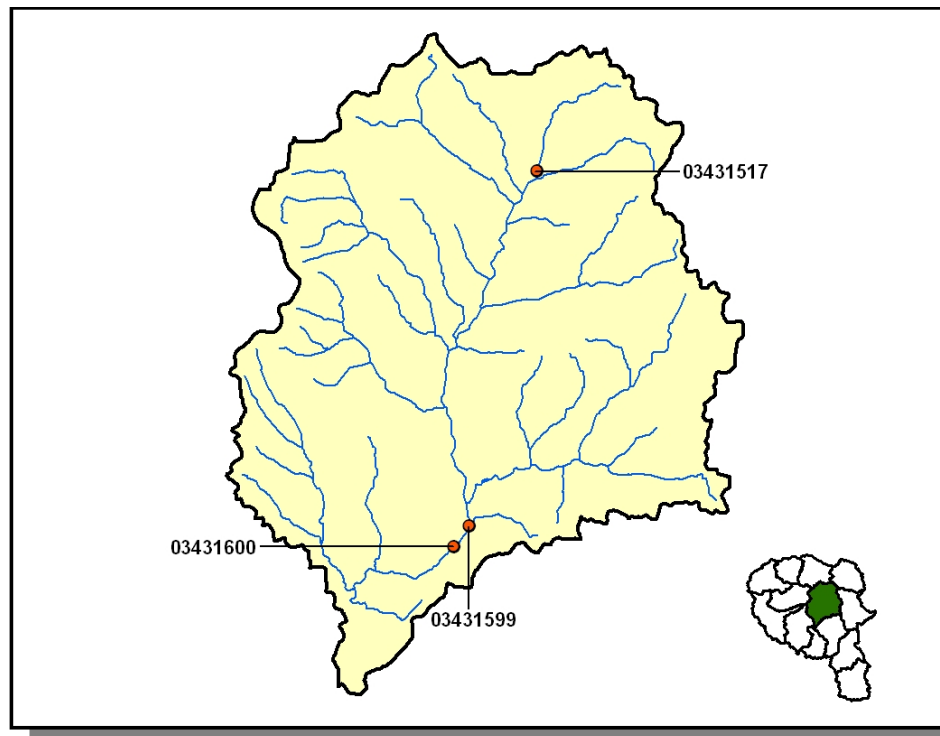


Figure 4-61. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020105. More information is provided in Appendix IV.

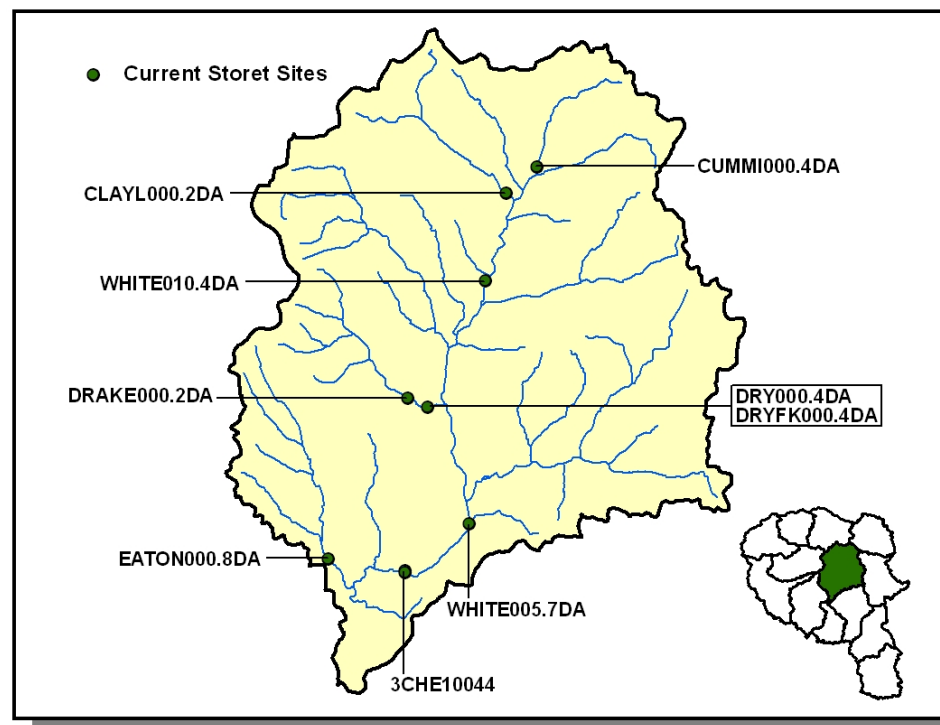


Figure 4-62. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020105. More information, including site names and locations, is provided in Appendix IV.

4.2.E.iii. Permitted Activities.

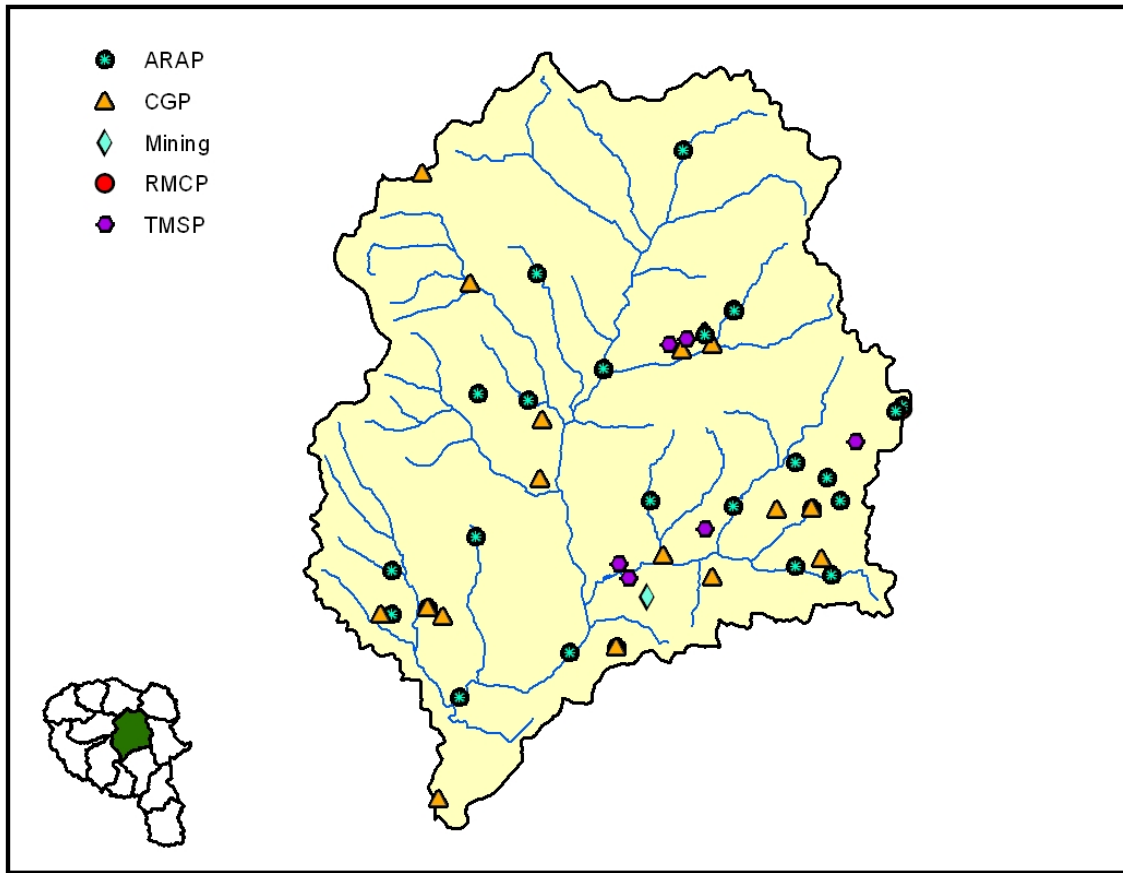


Figure 4-63. Location of Permits Issued in Subwatershed 051302020105. More information, including the names of facilities, is provided in Appendix IV.

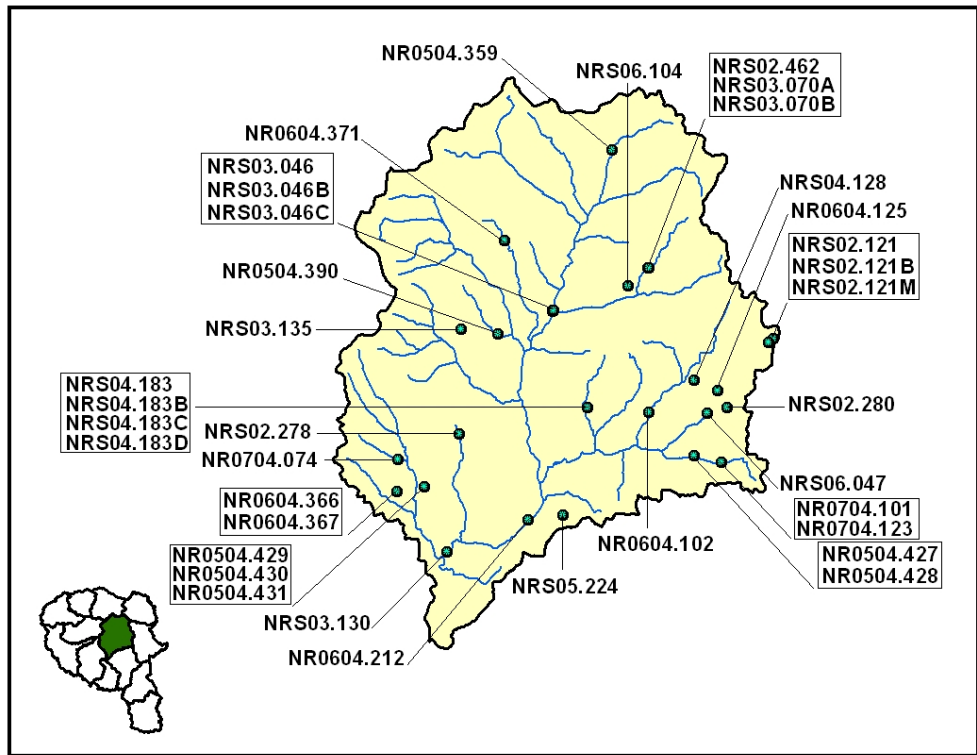


Figure 4-64. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020105. More information is provided in Appendix IV.

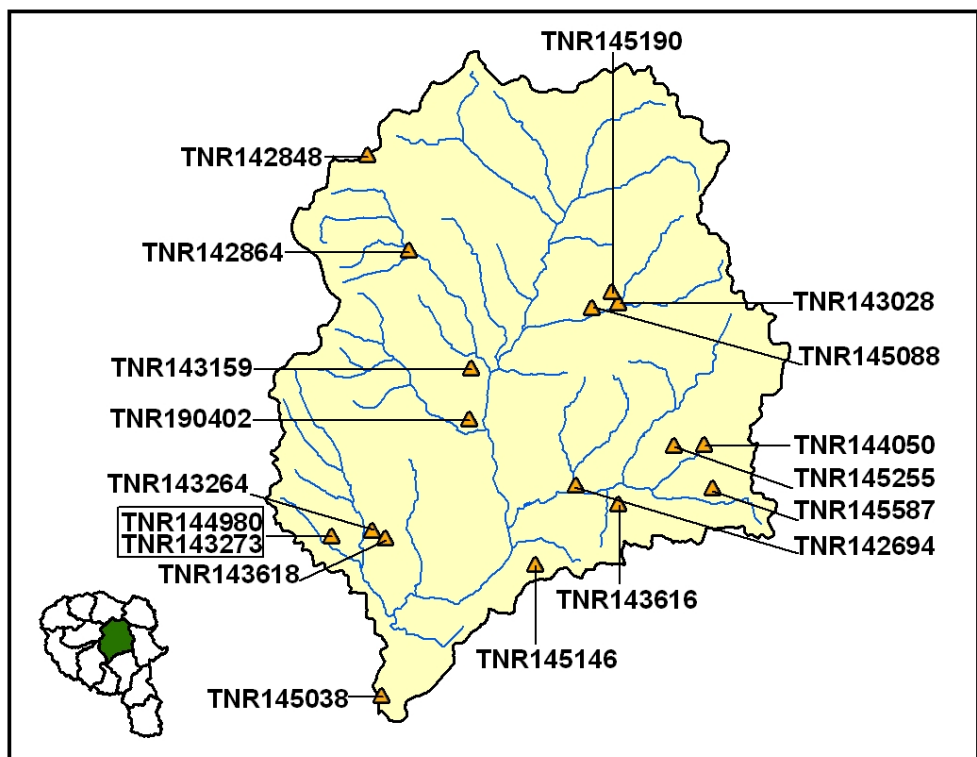


Figure 4-65. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020105. More information is provided in Appendix IV.

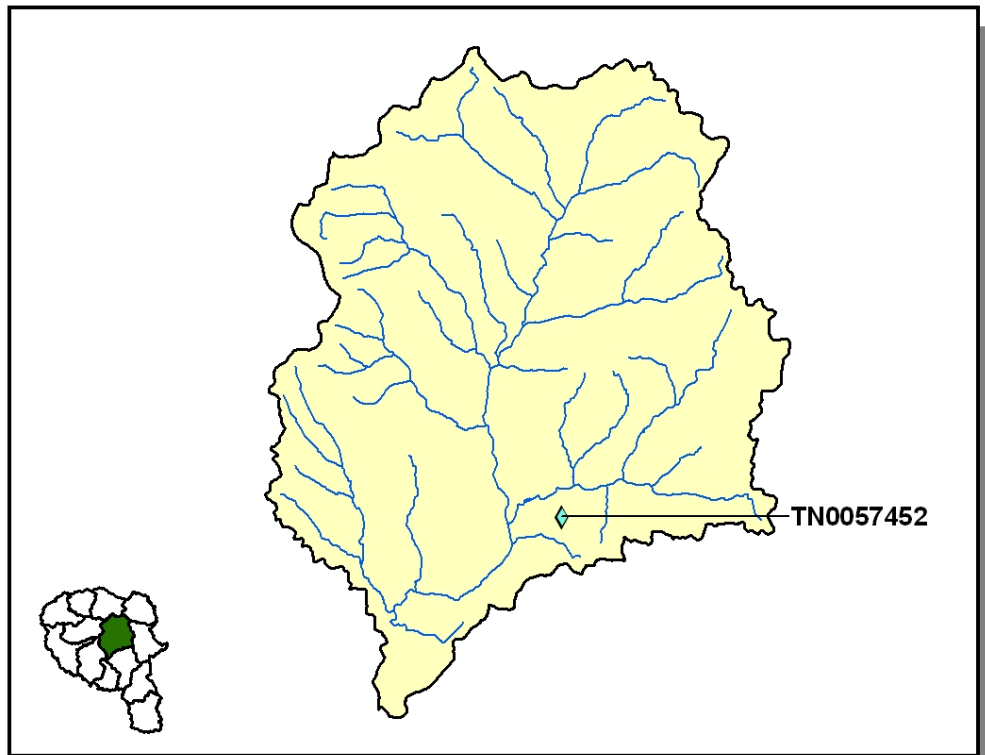


Figure 4-66. Location of permitted MINING facilities in Subwatershed 051302020105. More information is provided in Appendix IV.

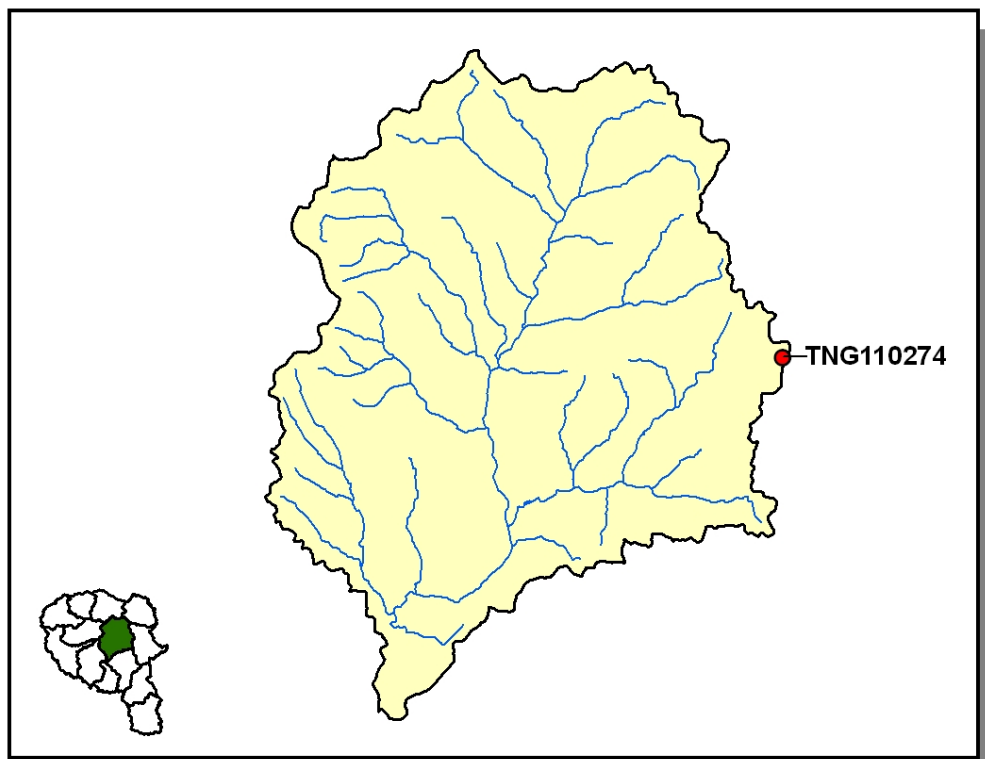


Figure 4-67. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020105. More information, including the names of facilities, is provided in Appendix IV.

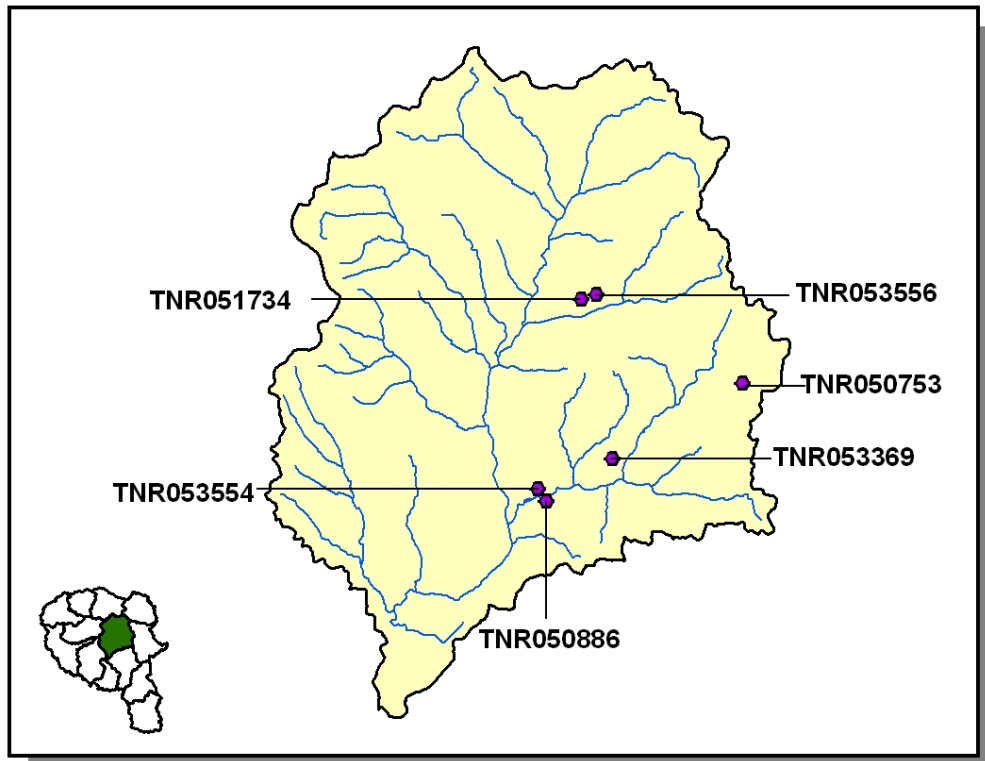


Figure 4-68. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020105. More information is provided in Appendix IV.

4.2.E.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	

Table 4-29. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-30. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	15.01
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Grass (Hayland)	0.07

Table 4-31. Annual Estimated Total Soil Loss in Subwatershed 051302020105.

4.2.F. 051302020106 (Richland Creek).

4.2.F.i. General Description

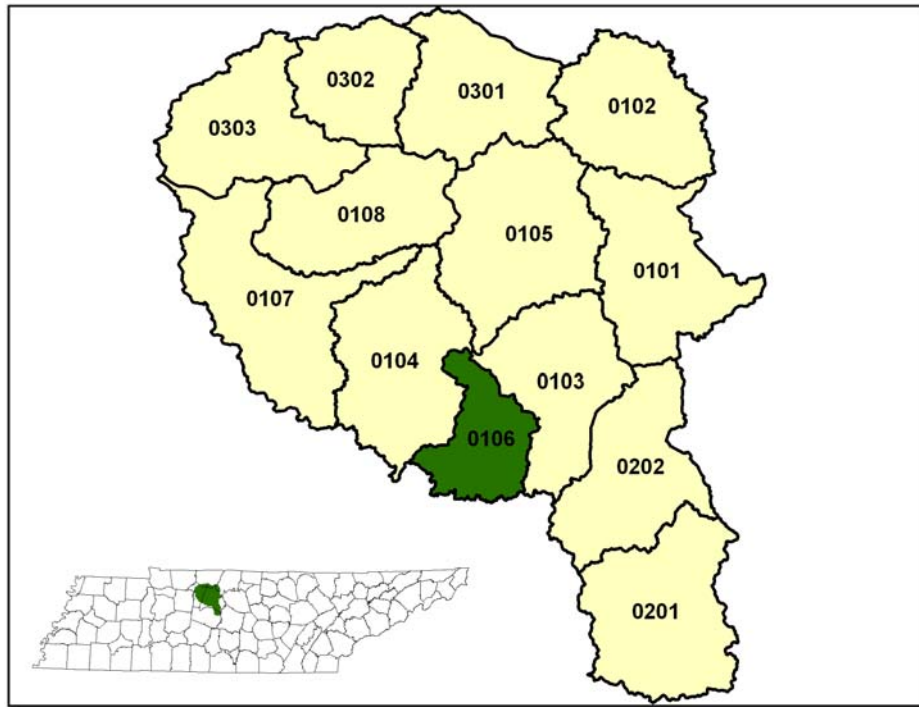


Figure 4-69. Location of Subwatershed 051302020106. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.



Figure 4-70. Locational Details of Subwatershed 051302020106.

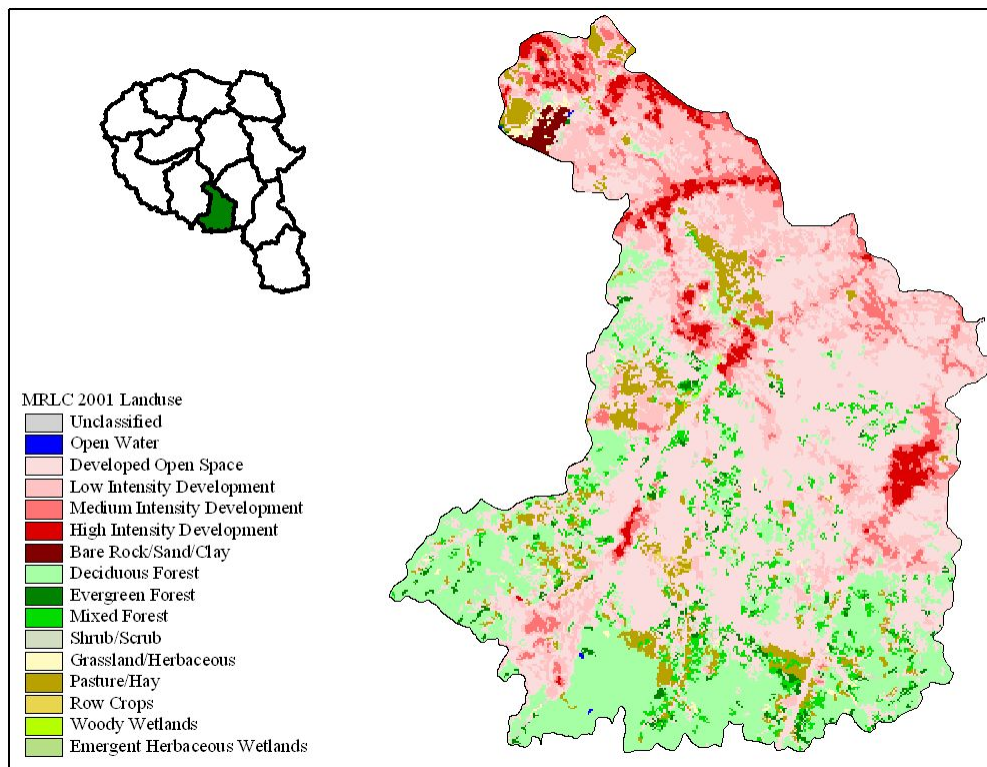


Figure 4-71. Illustration of Land Use Distribution in Subwatershed 051302020106.

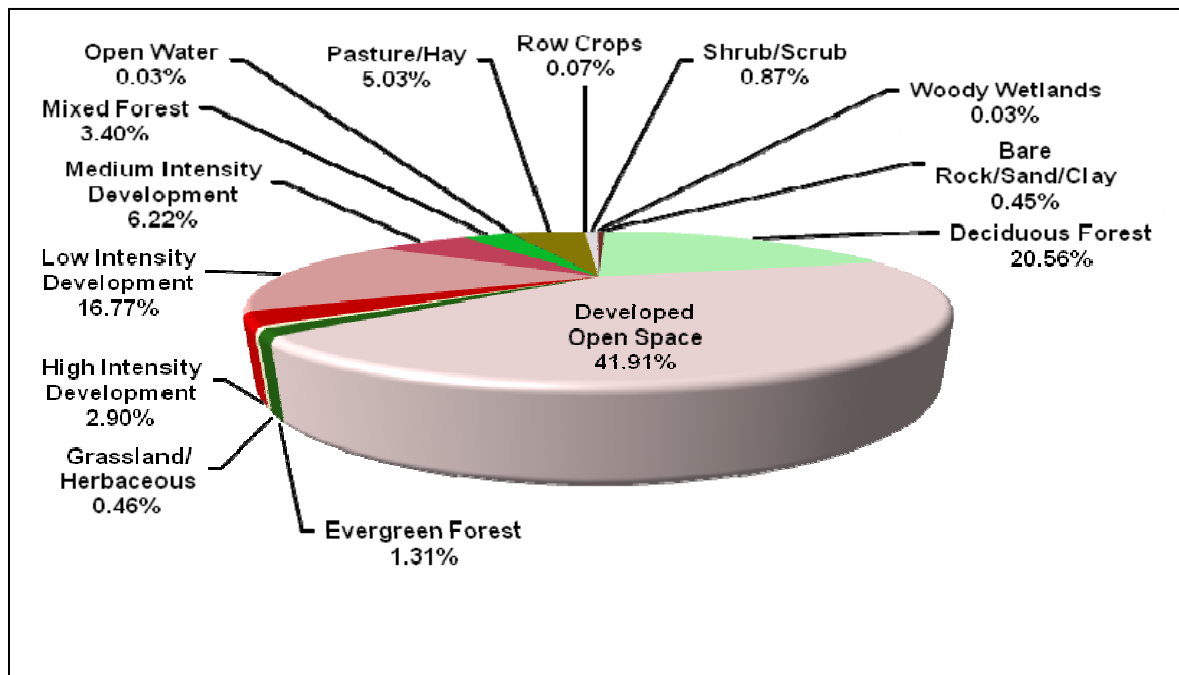


Figure 4-72. Land Use Distribution in Subwatershed 051302020106. More information is provided in Appendix IV.

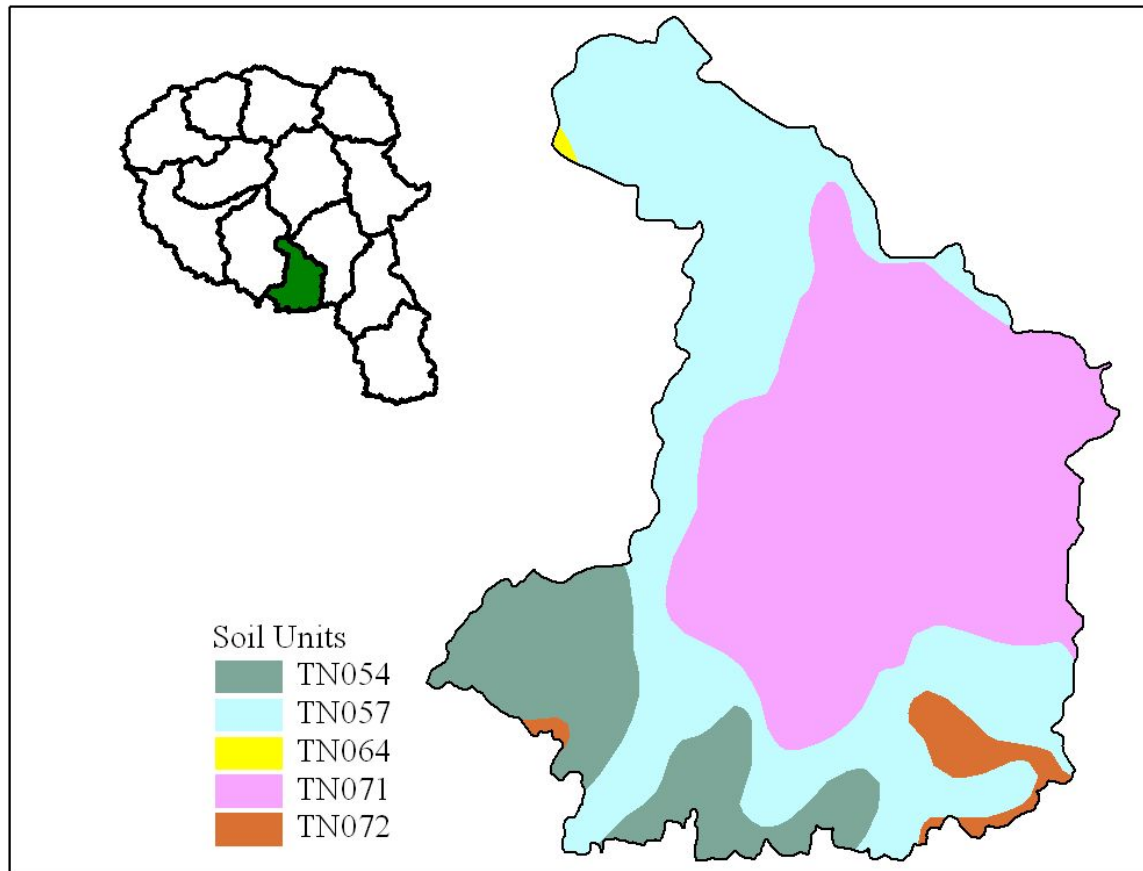


Figure 4-73. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020106.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN071	0.00	C	2.37	5.70	Silty Loam	0.33
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-32. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020106. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Davidson	510,784	535,032	569,891	5.26	26,884	28,160	29,995	11.60

Table 4-33. Population Estimates in Subwatershed 051302020106.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Belle Meade	Davidson	2,830	1,145	1093	52	0
Forest Hills	Davidson	4,240	1,601	625	976	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		495,588	222,267	205,358	16,604	305

Table 4-34. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020106.

4.2.F.ii. USGS Gaging Stations and STORET Sites.

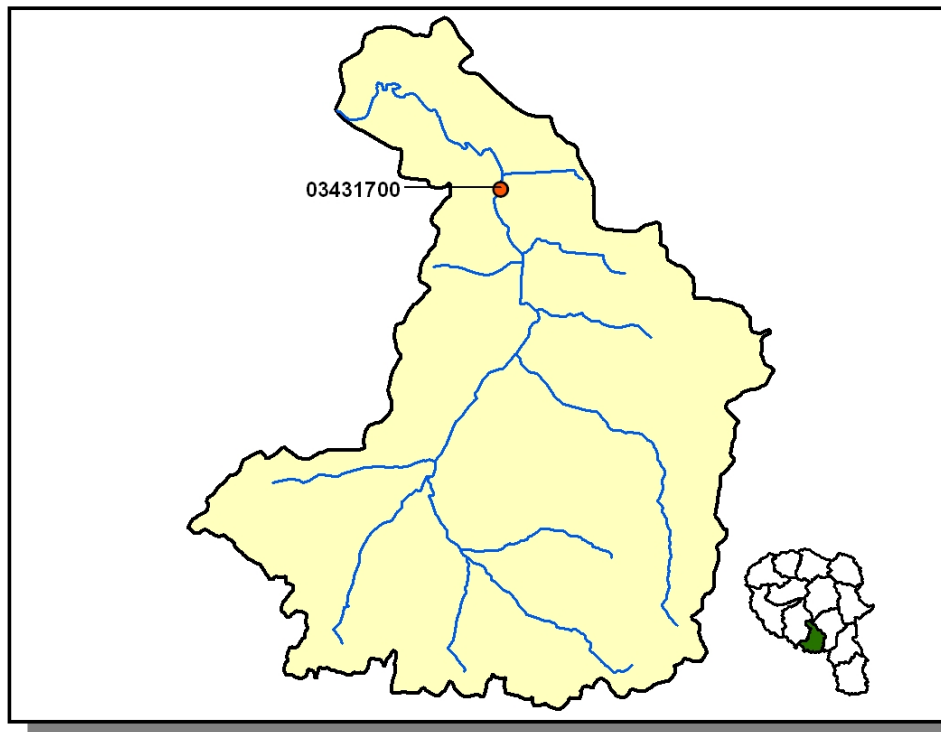


Figure 4-74. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020106. More information is provided in Appendix IV.

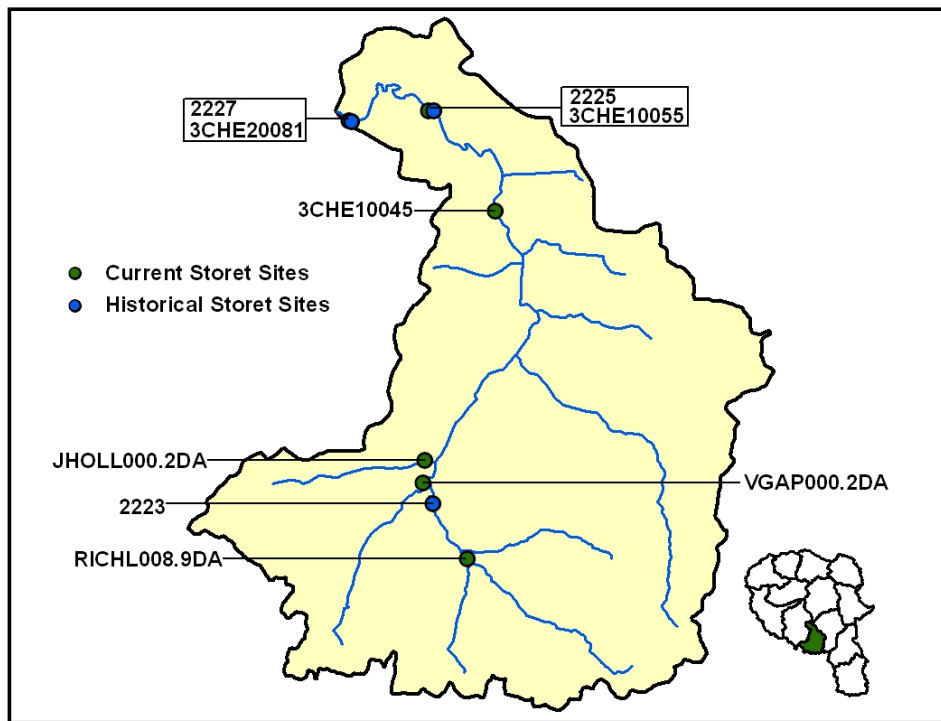


Figure 4-75. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020106. More information, including site names and locations, is provided in Appendix IV.

4.2.F.iii. Permitted Activities.

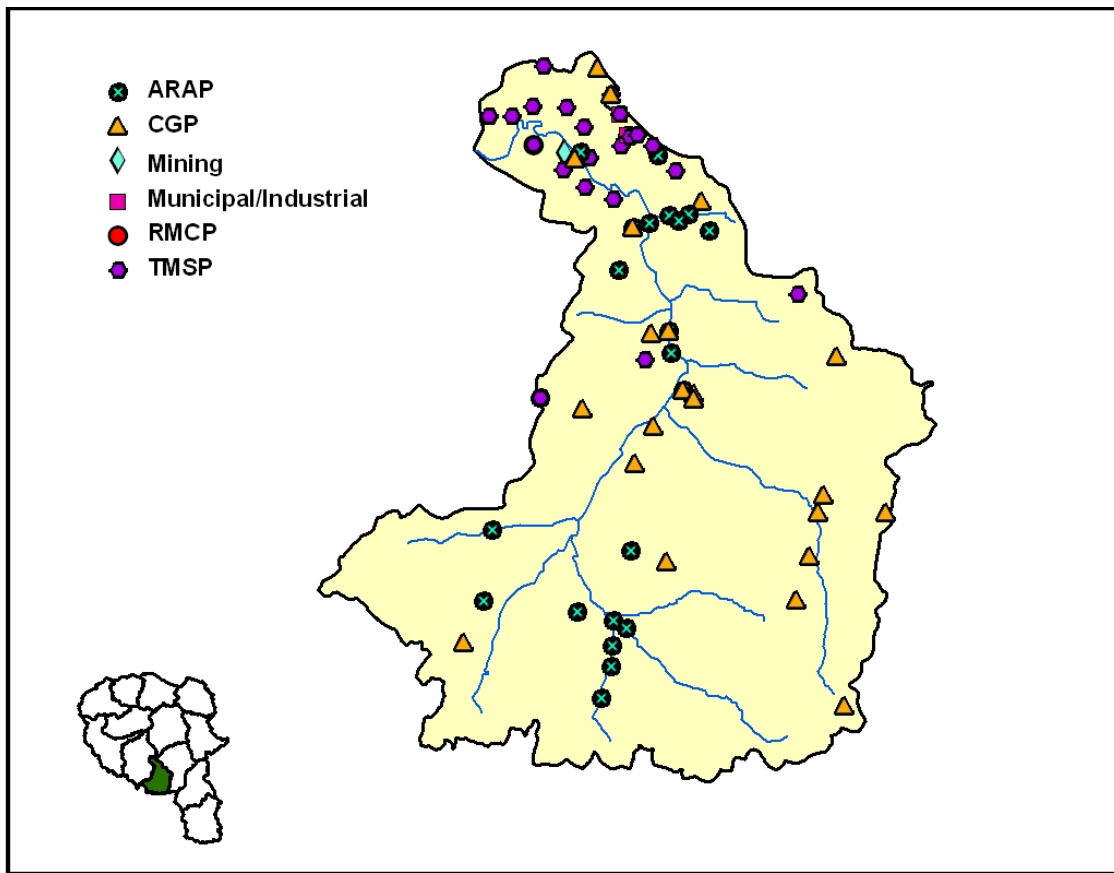


Figure 4-76. Location of Permits Issued in Subwatershed 051302020106. More information, including the names of facilities, is provided in Appendix IV.

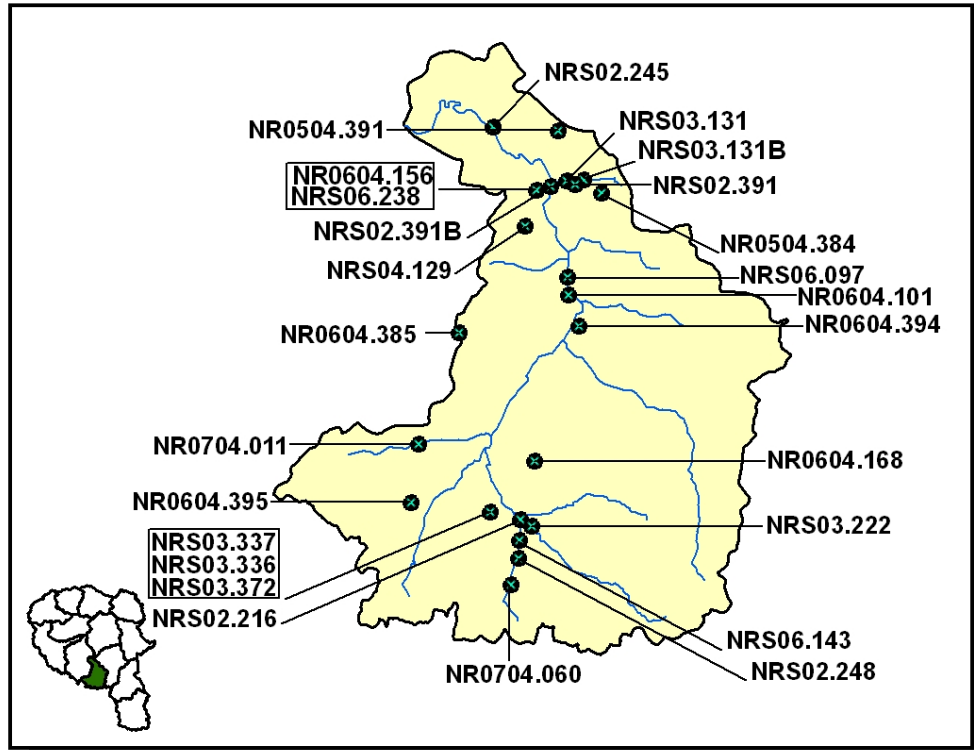


Figure 4-77. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020106. More information is provided in Appendix IV.

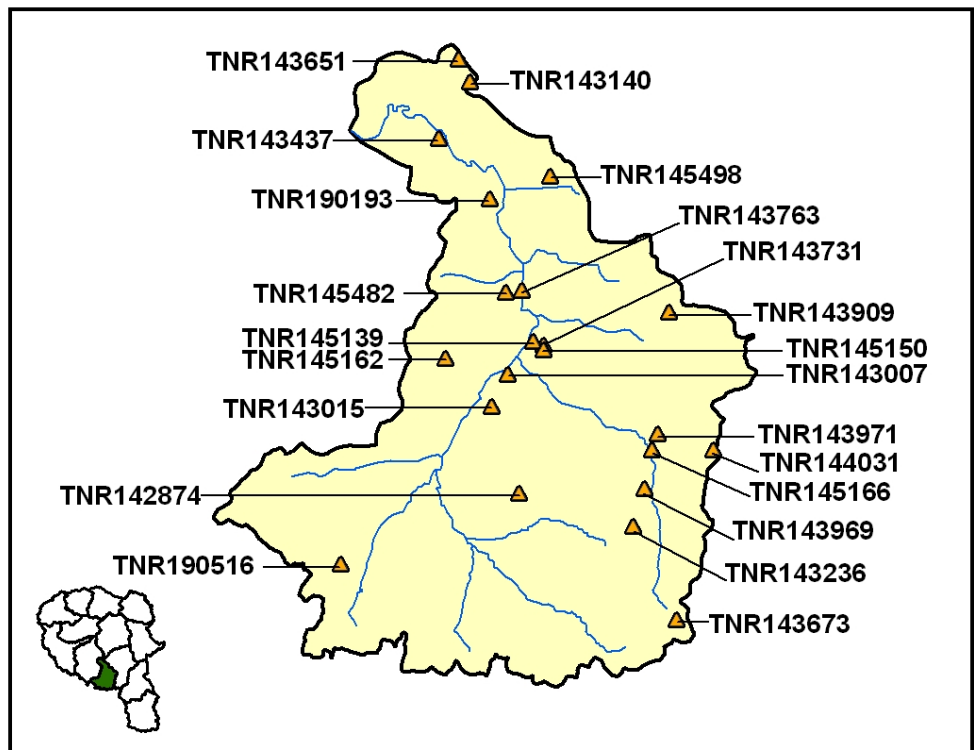


Figure 4-78. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020106. More information is provided in Appendix IV.

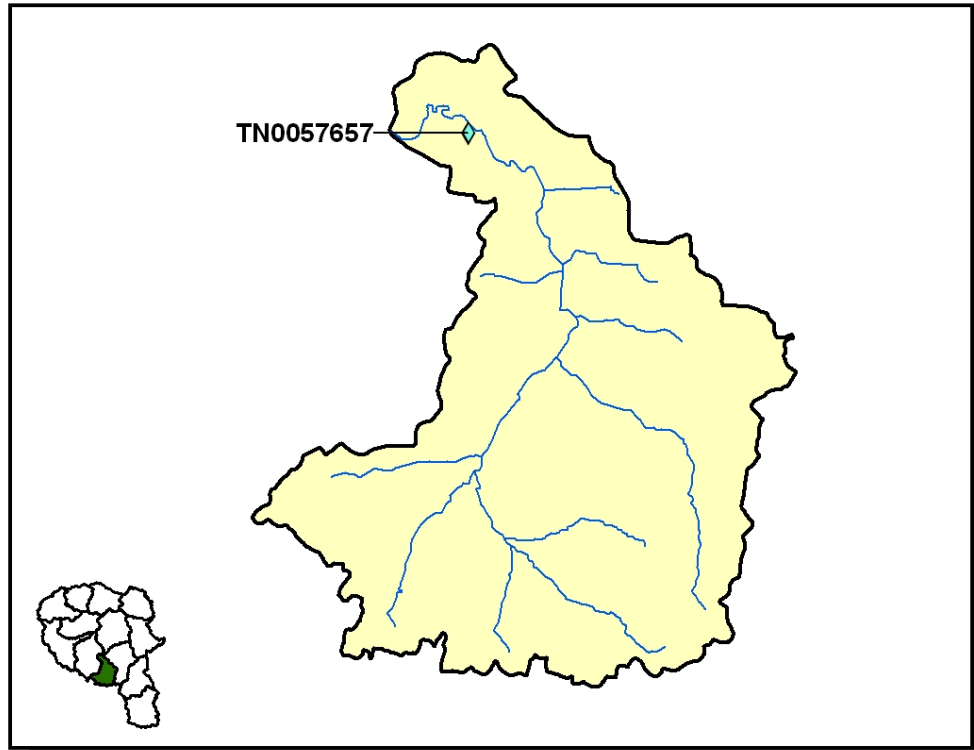


Figure 4-79. Location of permitted MINING facilities in Subwatershed 051302020106. More information is provided in Appendix IV.

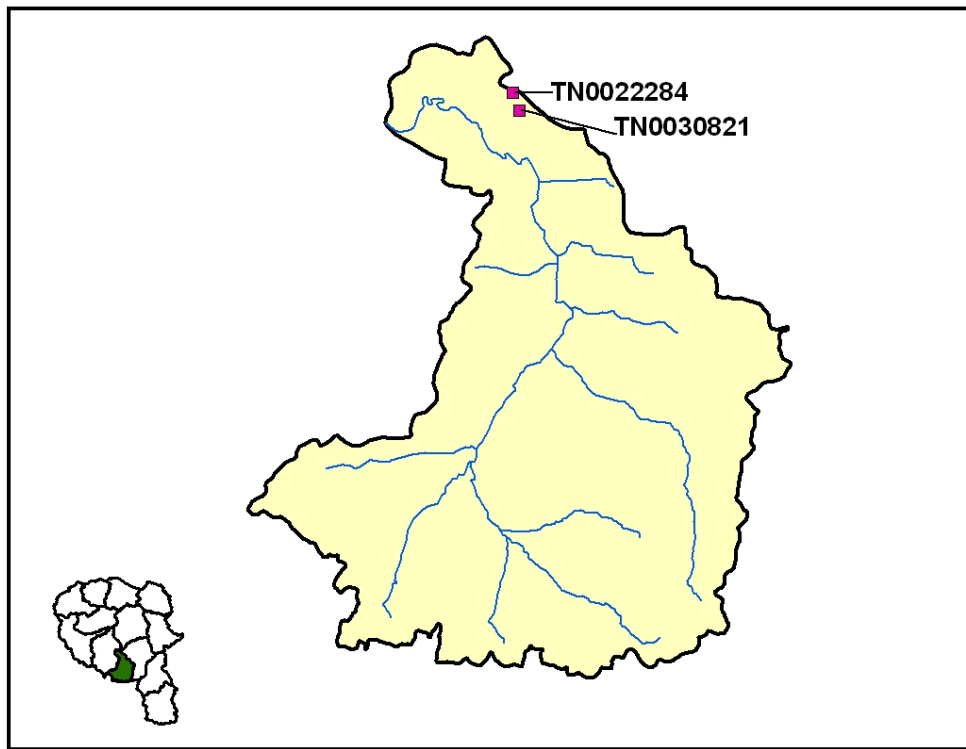


Figure 4-80. Location of permitted MUNICIPAL and INDUSTRIAL facilities in subwatershed 051302020106. More information, including the name of the facility is provided in Appendix IV.

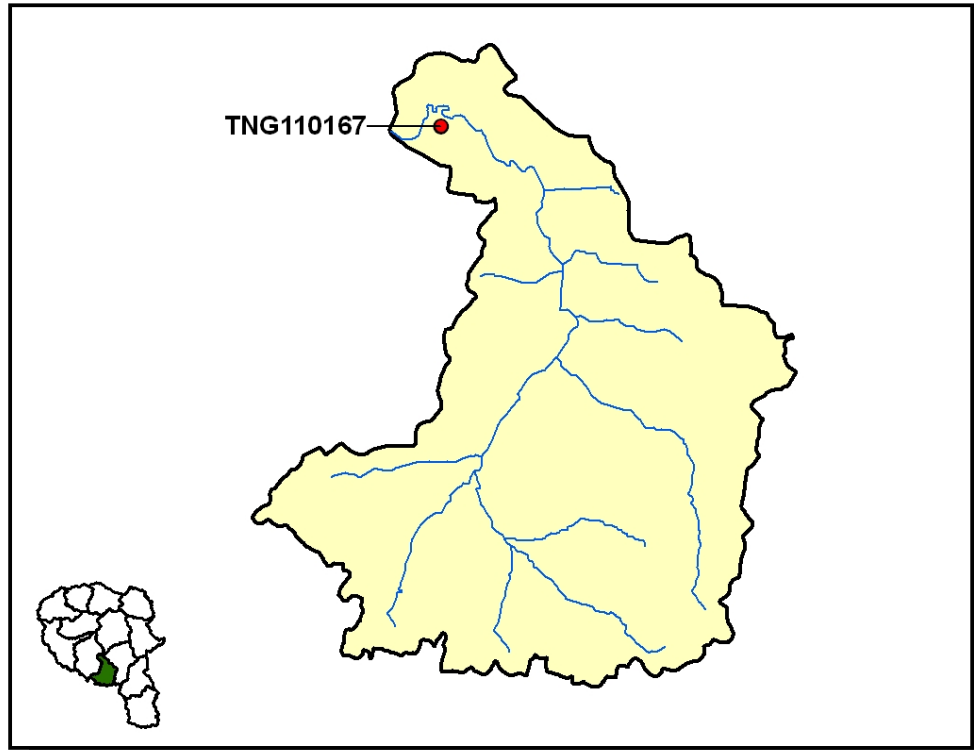


Figure 4-81. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020106. More information, including the names of facilities, is provided in Appendix IV.

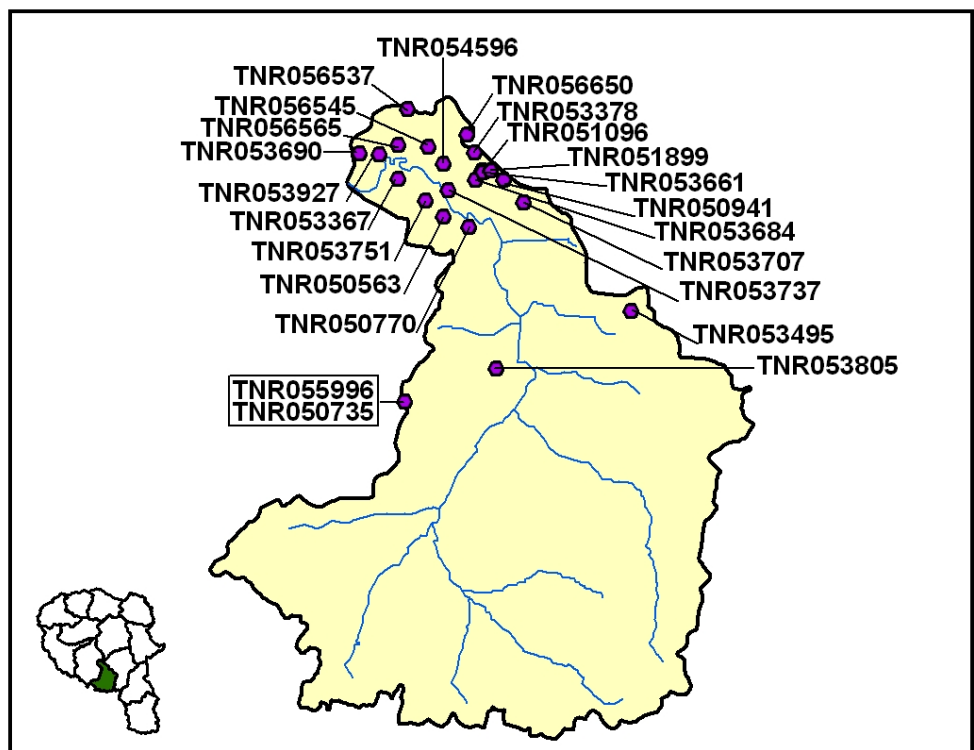


Figure 4-82. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020106. More information is provided in Appendix IV.

4.2.F.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	

Table 4-35. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-36. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	15.01
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Grass (Hayland)	0.07

Table 4-37. Annual Estimated Total Soil Loss in Subwatershed 051302020106.

4.2.G 051302020107 (Cumberland River).

4.2.G.i. General Description.

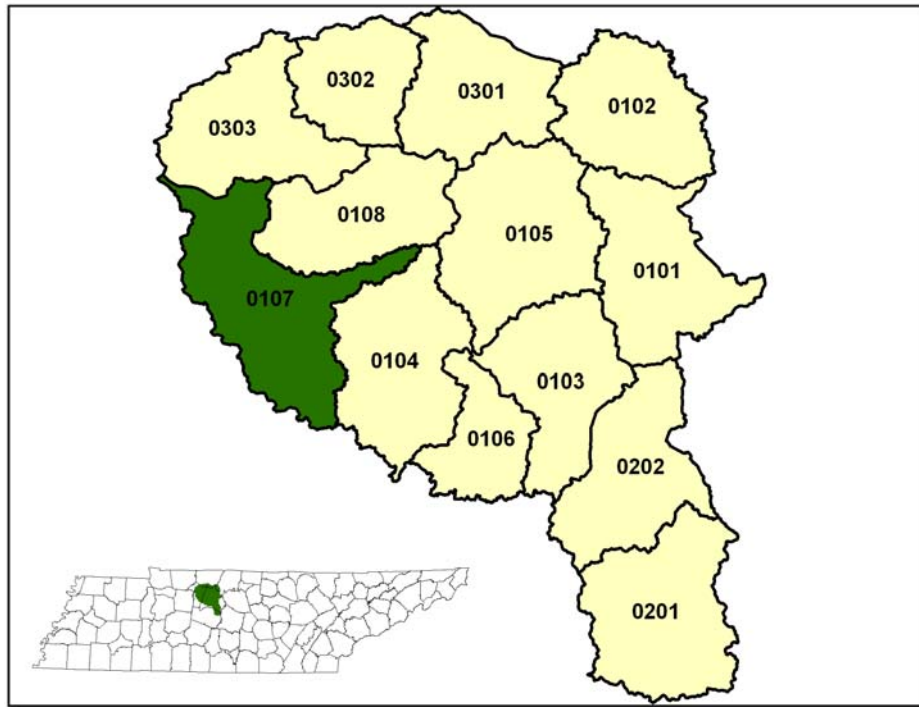


Figure 4-83. Location of Subwatershed 051302020107. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

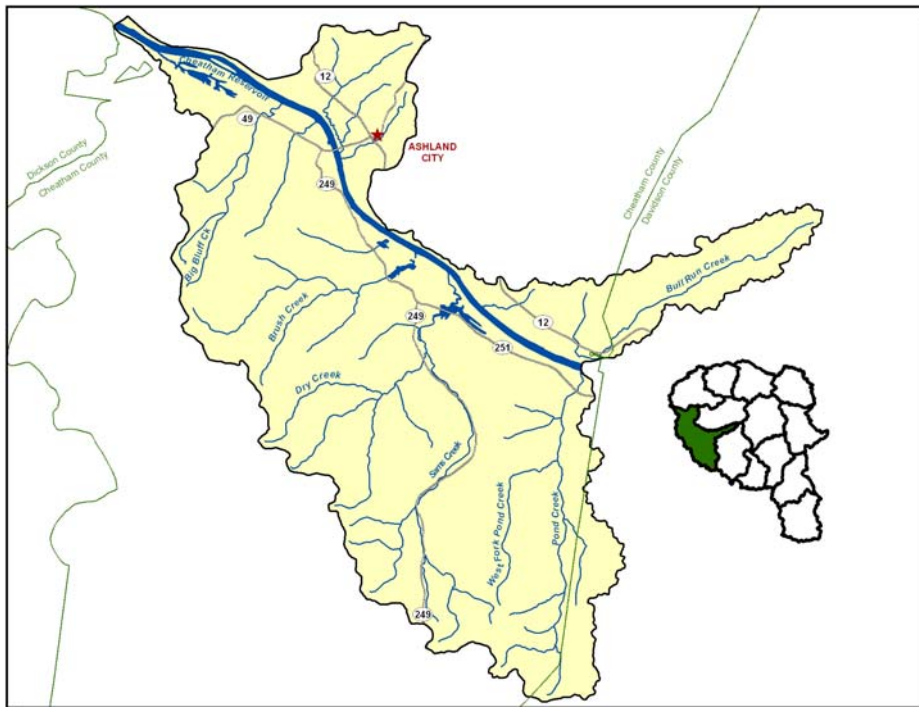


Figure 4-84. Locational Details of Subwatershed 051302020107.

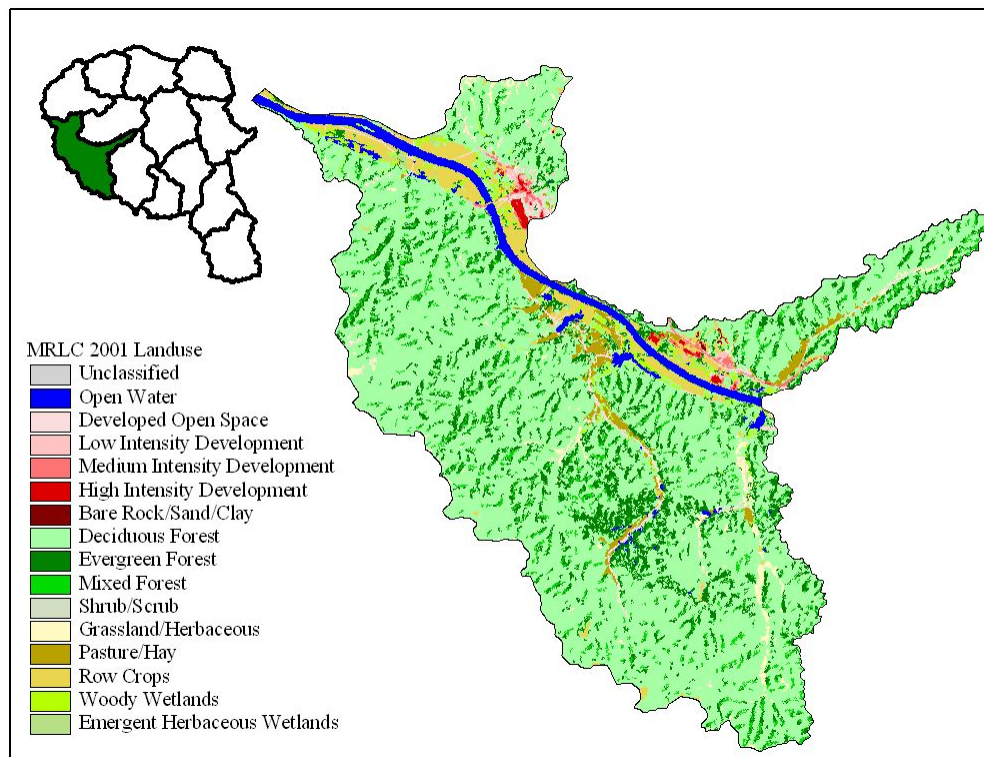


Figure 4-85. Illustration of Land Use Distribution in Subwatershed 051302020107.

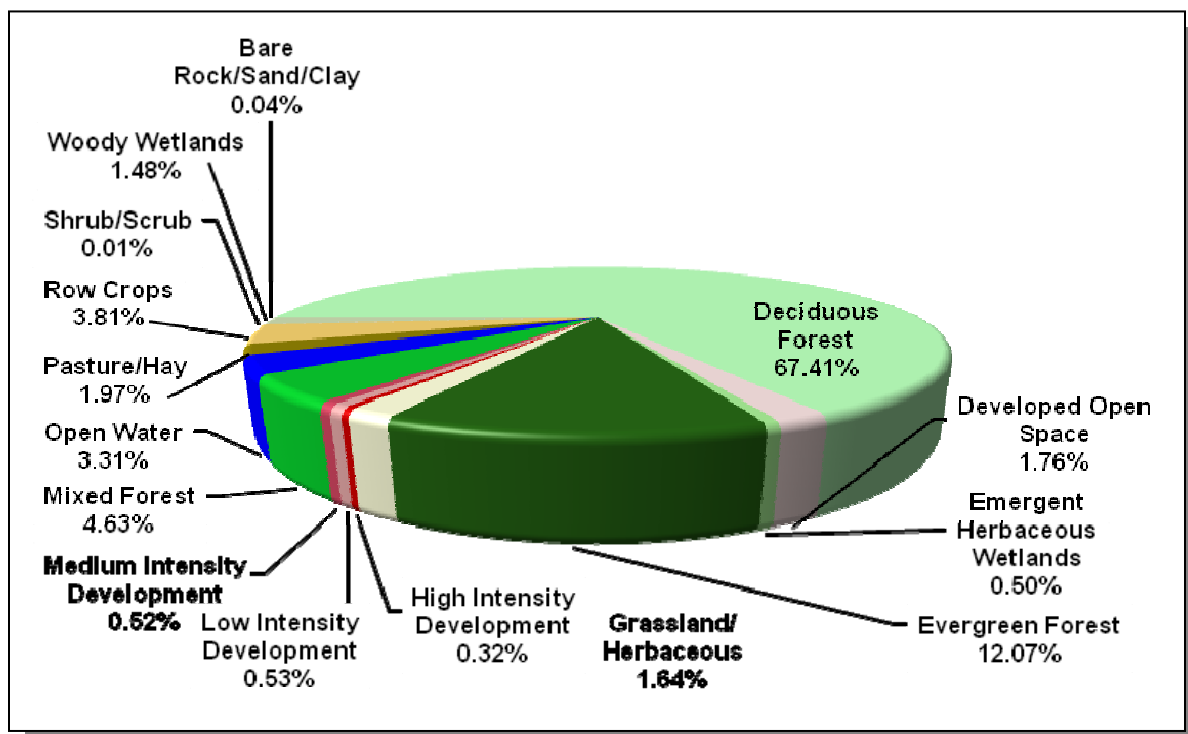


Figure 4-86. Land Use Distribution in Subwatershed 051302020107. More information is provided in Appendix IV.

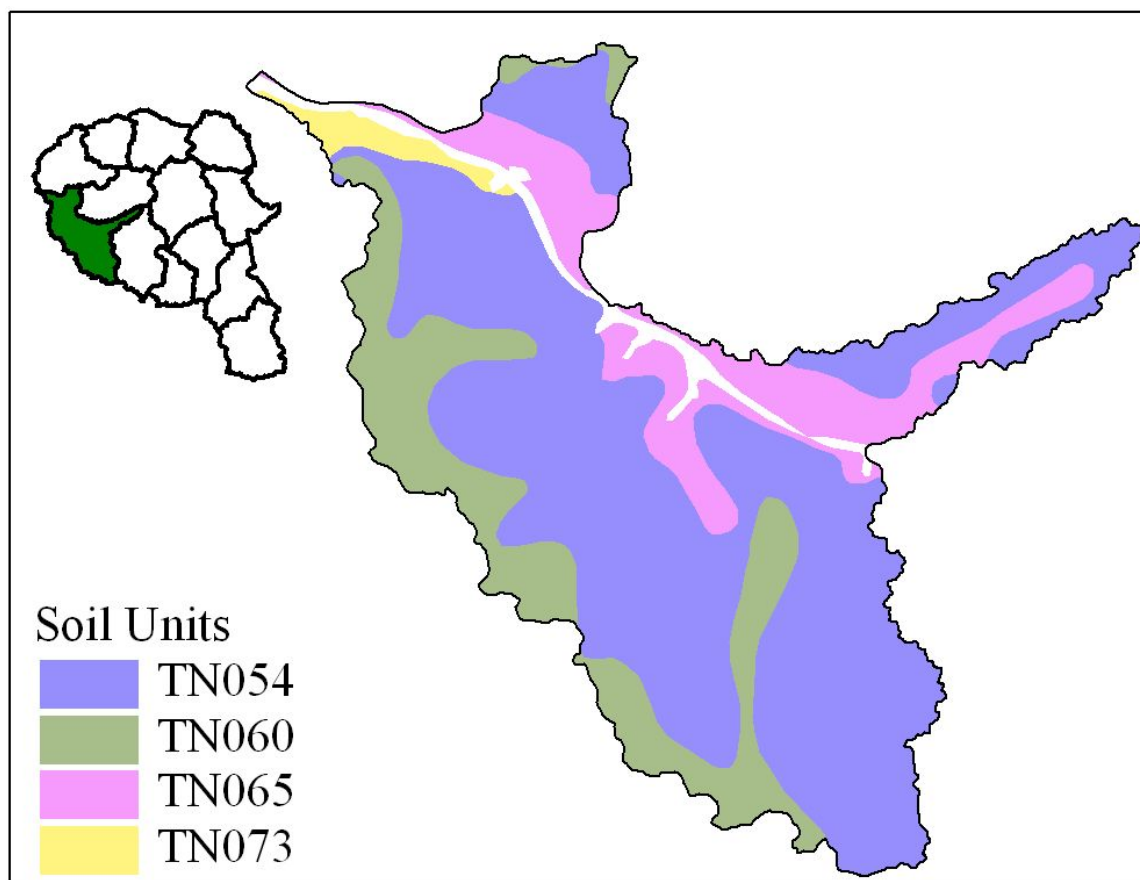


Figure 4-87. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020107.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN065	0.00	C	1.15	5.52	Loam	0.32
TN073	0.00	B	2.97	5.21	Loam	0.34

Table 4-38. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020107. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cheatham	27,140	34,402	35,912	19.59	5,315	6,738	7,033	32.30
Davidson	510,784	535,032	569,891	1.14	5,808	6,084	6,480	11.60
Dickson	35,061	40,937	43,156	0.05	17	20	21	23.50
Totals	572,985	610,371	648,959		11,140	12,842	13,534	21.50

Table 4-39. Population Estimates in Subwatershed 051302020107.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Ashland City	Cheatham	2,552	1094	991	103	0
Total		491,070	220,615	204,631	15,679	305

Table 4-40. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020107.

4.2.G.ii. USGS Gaging Stations and STORET Sites.

There are no USGS continuous record gaging stations located in subwatershed 051302020107.

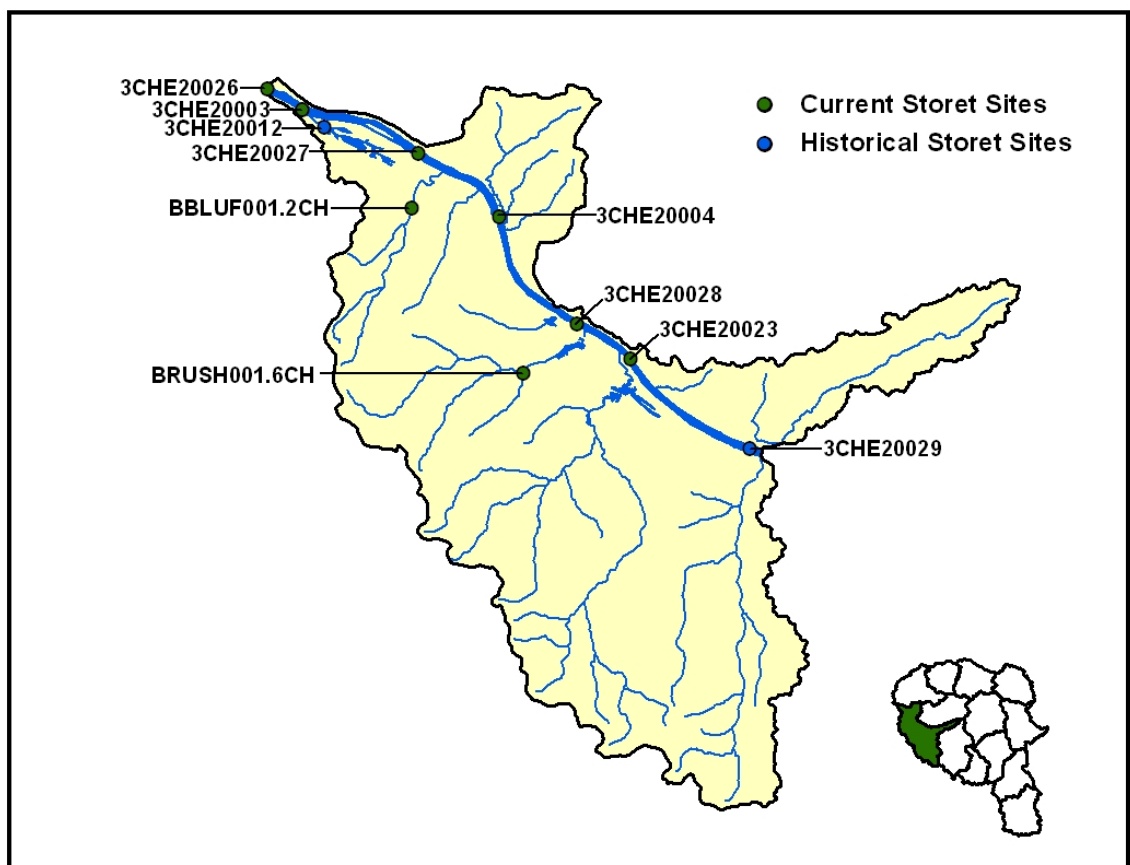


Figure 4-88. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020107. More information, including site names and locations, is provided in Appendix IV.

4.2.G.iii. Permitted Activities.

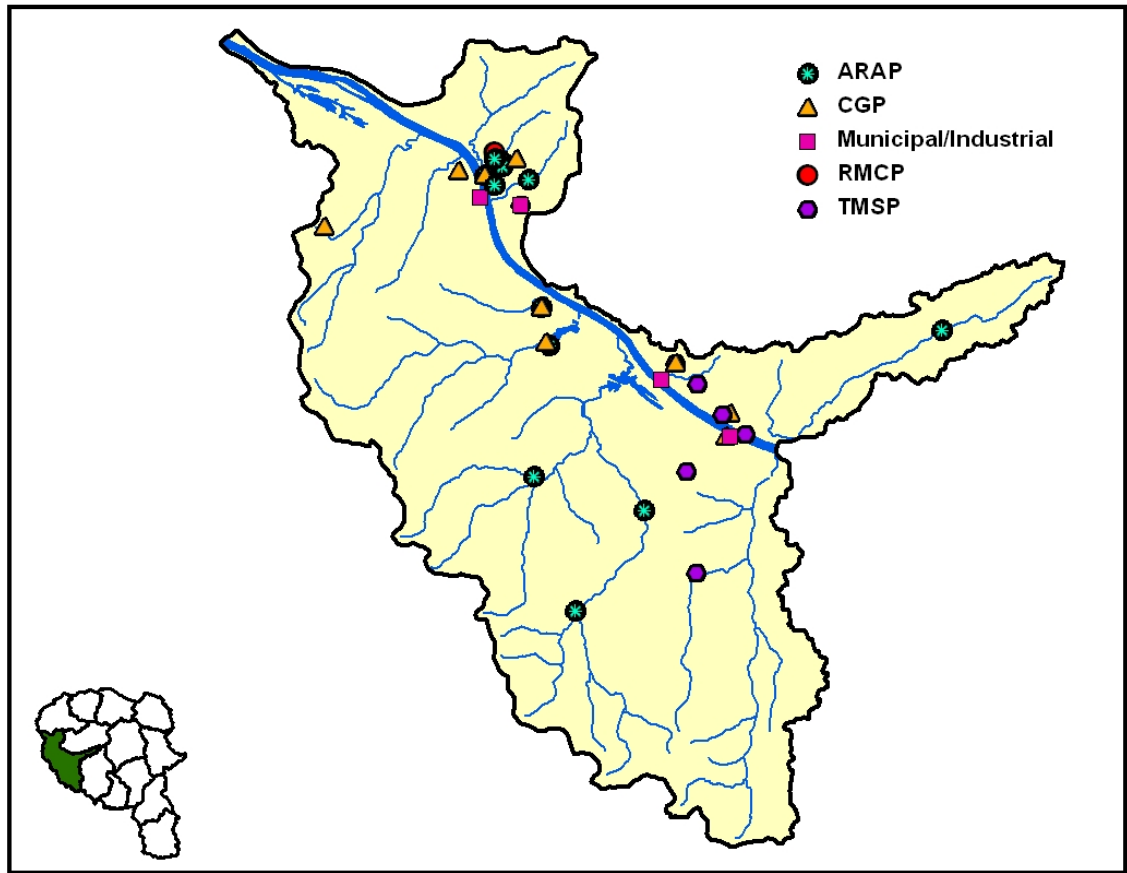


Figure 4-89. Location of Permits Issued in Subwatershed 051302020107. More information, including the names of facilities, is provided in Appendix IV.

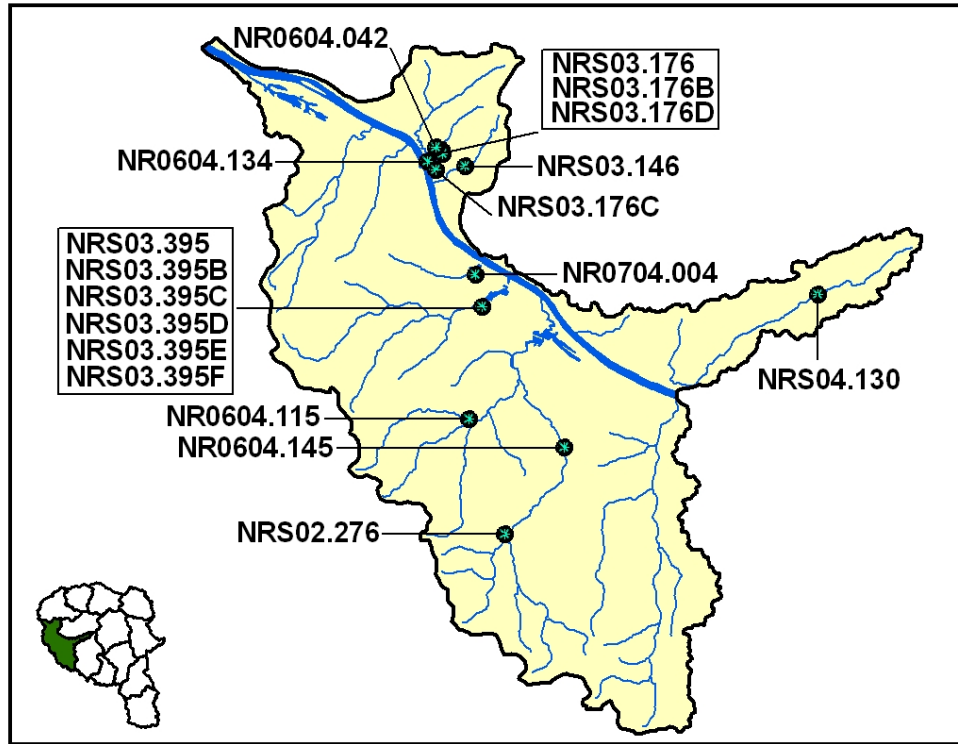


Figure 4-90. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020107. More information is provided in Appendix IV.

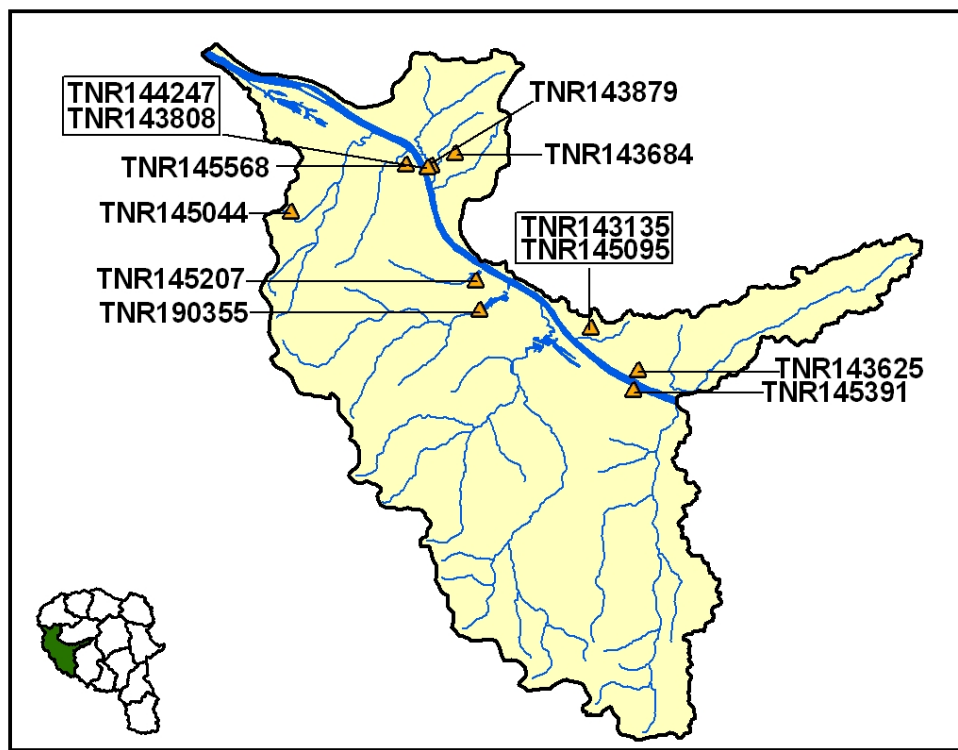


Figure 4-91. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020107. More information is provided in Appendix IV.

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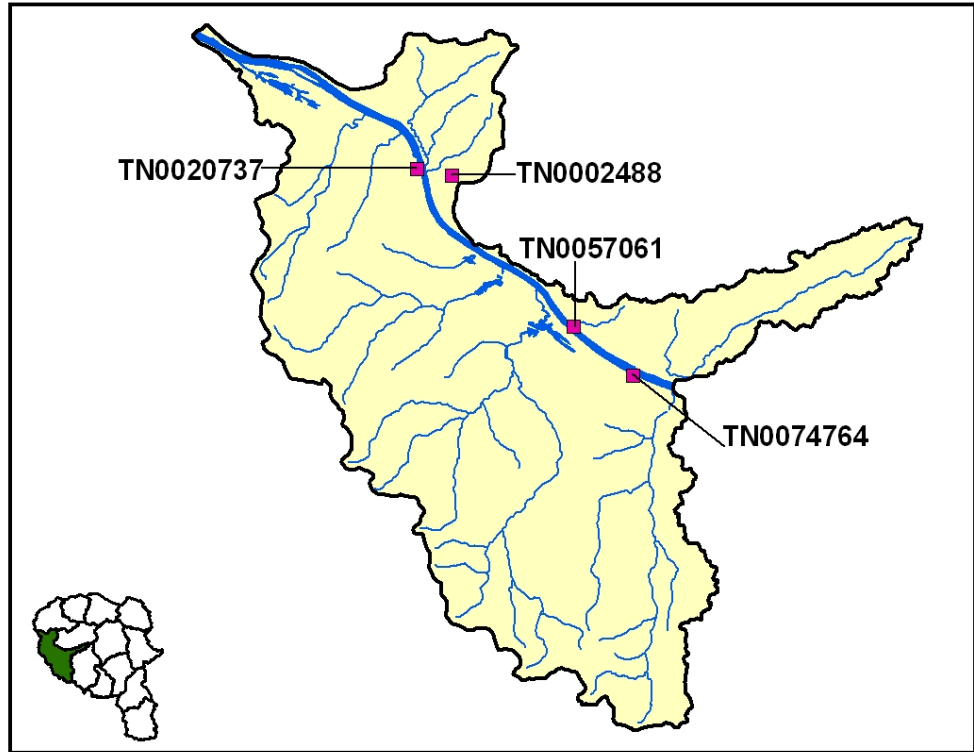


Figure 4-92. Location of permitted MUNICIPAL and INDUSTRIAL facilities in subwatershed 051302020107. More information, including the name of the facility is provided in Appendix IV.

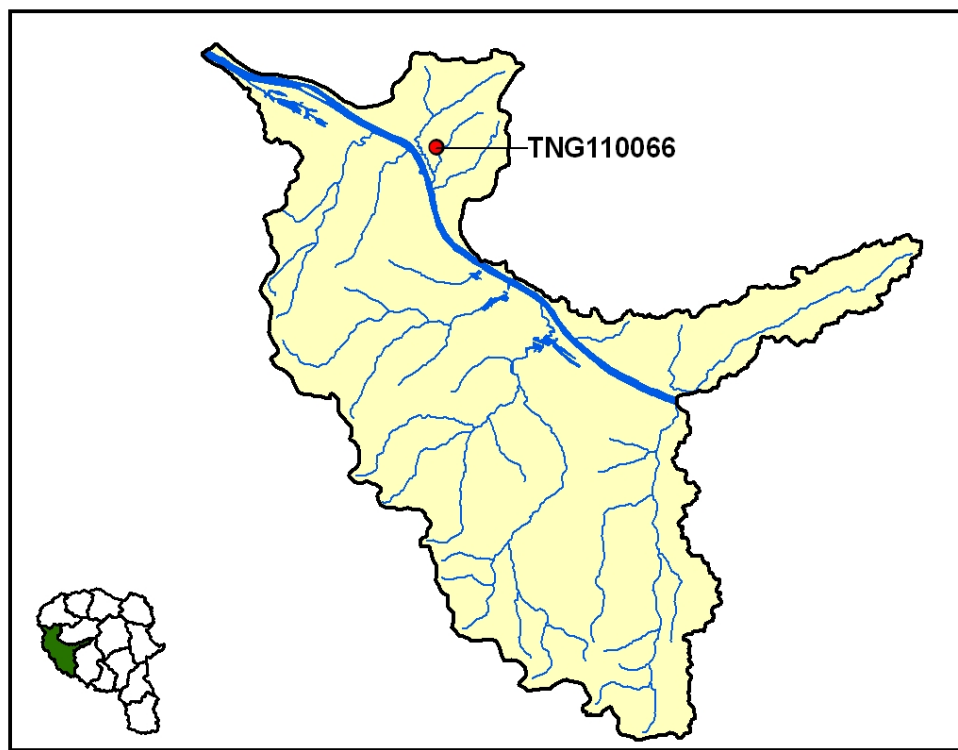


Figure 4-93. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020107. More information, including the names of facilities, is provided in Appendix IV.

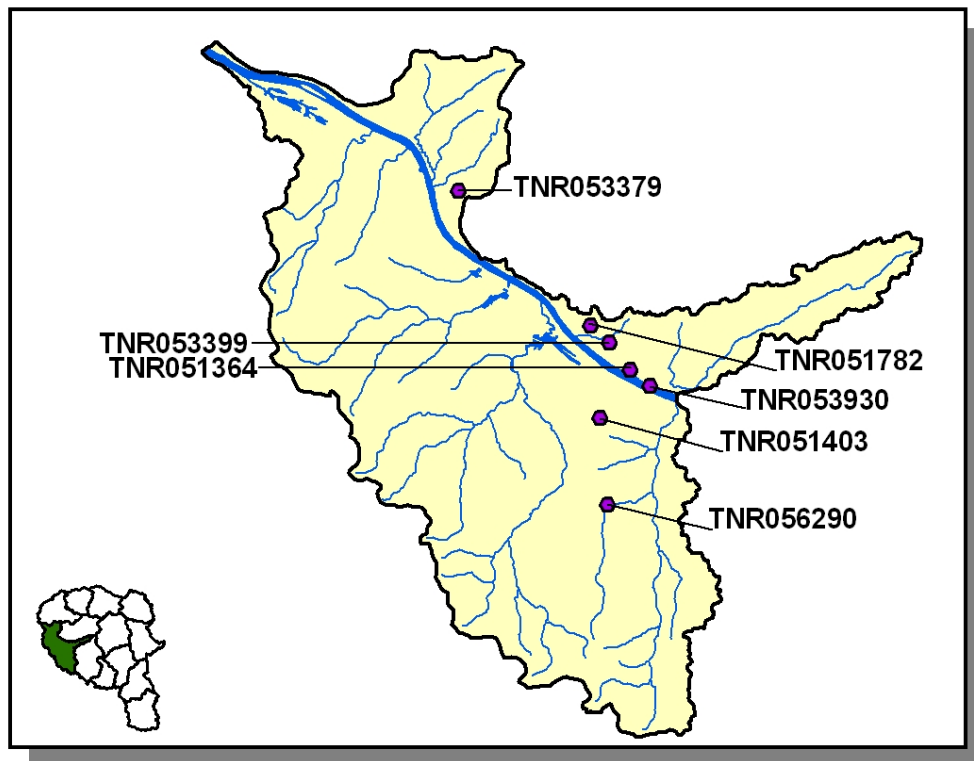


Figure 4-94. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020107. More information is provided in Appendix IV.

4.2.G.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Davidson		9,207		1,572	73	
Dickson		28,271		1,931	2,029	30

Table 4-41. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Davidson	108.7	108.1	2.3	9.7
Dickson	174.3	174.3	1.8	7.7

Table 4-42. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	10.01
Corn (Row Crops)	8.51
Other Vegetable and Truck Crop	7.71
All Other Close Grown Cropland	2.26
Vineyard (Horticultural)	1.05
Grass Forbs Legumes Mixed (Pastureland)	0.81
Grass (Pastureland)	0.67
Other Cropland not Planted	0.52
Grass (Hayland)	0.46
Legume (Hayland)	0.38
Legume Grass (Hayland)	0.29
Farmsteads and Ranch Headquarters	0.23
Conservation Reserve Program Land	0.07

Table 4-43. Annual Estimated Total Soil Loss in Subwatershed 051302020107.

4.2.H. 051302020108 (Marrowbone Creek).

4.2.H.i. General Description.

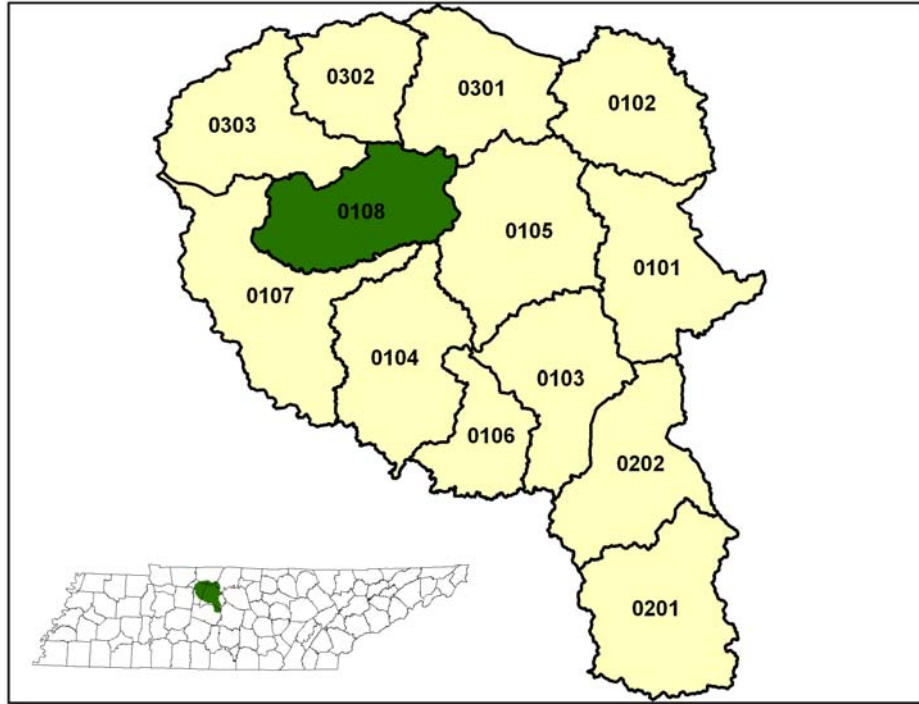


Figure 4-95. Location of Subwatershed 051302020108. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

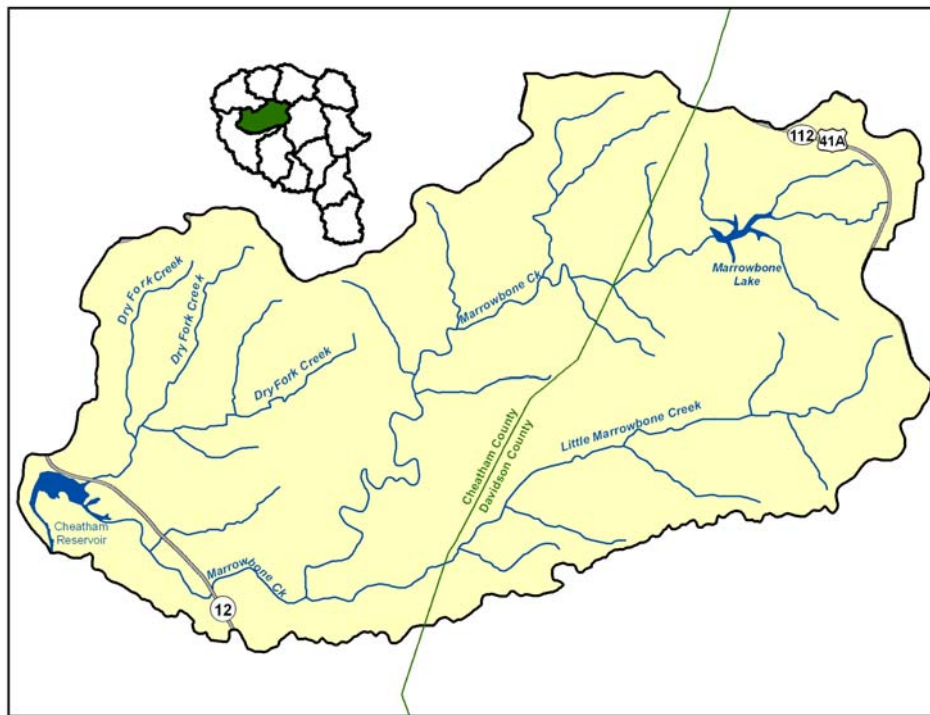


Figure 4-96. Locational Details of Subwatershed 051302020108.

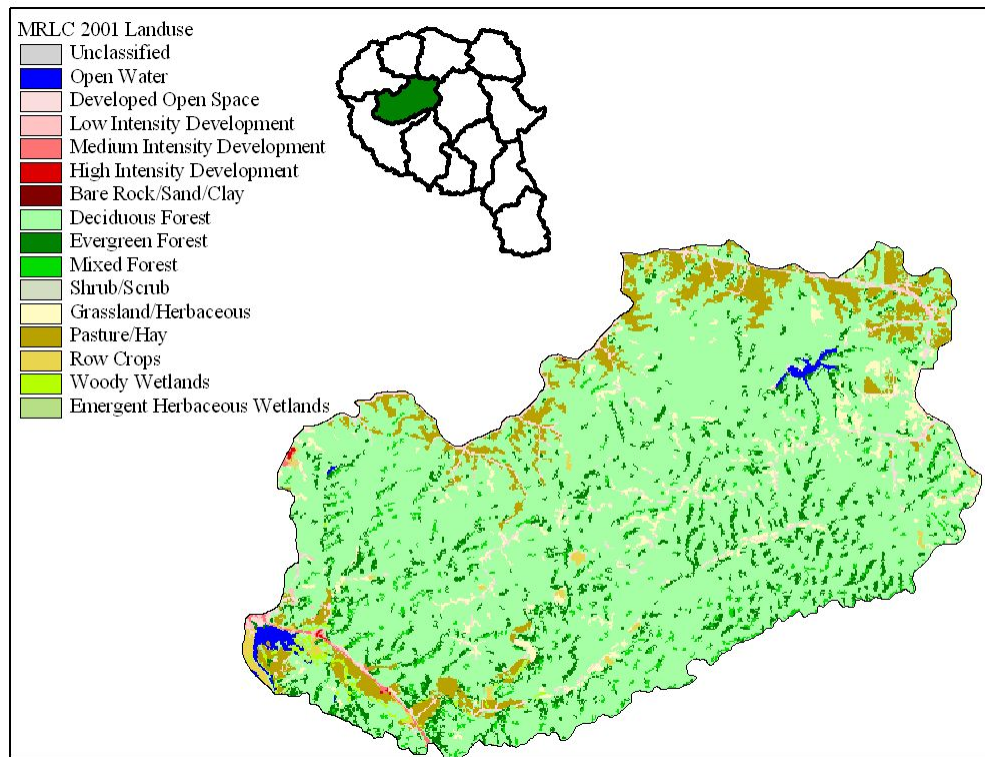


Figure 4-97. Illustration of Land Use Distribution in Subwatershed 051302020108.

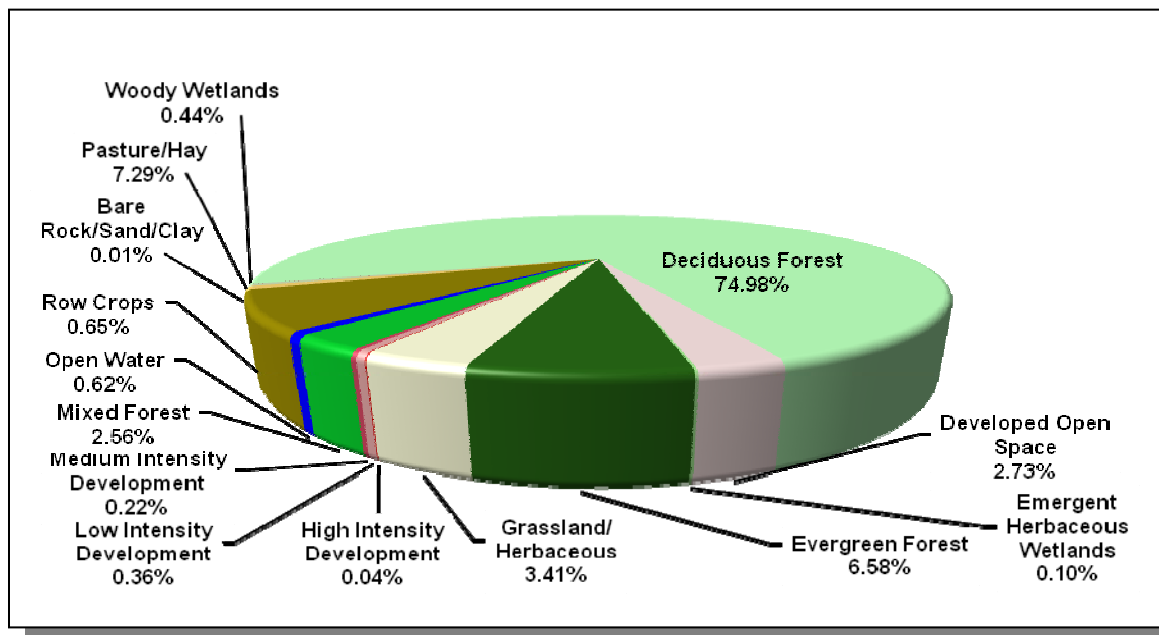


Figure 4-98. Land Use Distribution in Subwatershed 051302020108. More information is provided in Appendix IV.

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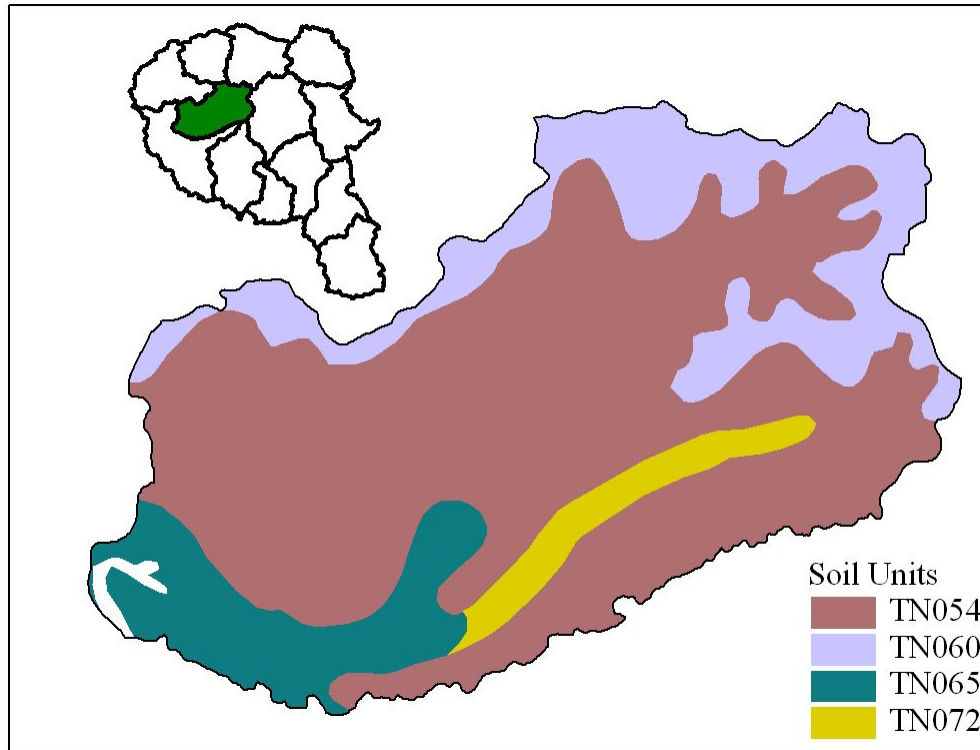


Figure 4-99. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020108.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN065	0.00	C	1.15	5.52	Loam	0.32
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-44. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020108. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cheatham	27,140	34,402	35,912	9.75	2,645	3,353	3,500	32.30
Davidson	510,784	535,032	569,891	3.20	16,344	17,120	18,235	11.60
Total	537,924	569,434	605,803		18,989	20,473	21,735	14.50

Table 4-45. Population Estimates in Subwatershed 051302020108.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Ashland City	Cheatham	2,552	1,094	991	103	0
Total		491,070	220,615	204,631	15,679	305

Table 4-46. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020108.

4.2.H.ii. USGS Gaging Stations and STORET Sites.

There are no USGS continuous record gaging stations located in subwatershed 051302020108.

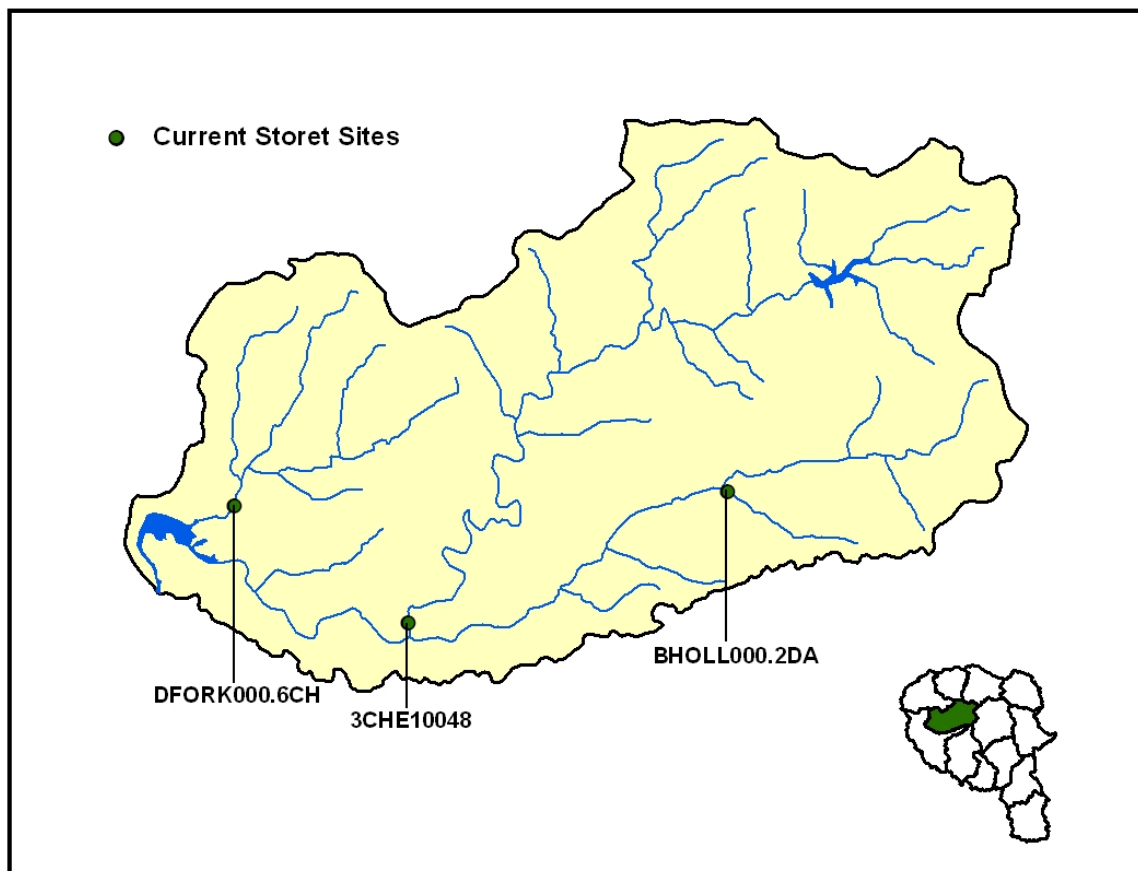


Figure 4-100. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020108. More information, including site names and locations, is provided in Appendix IV.

4.2.H.iii. Permitted Activities.

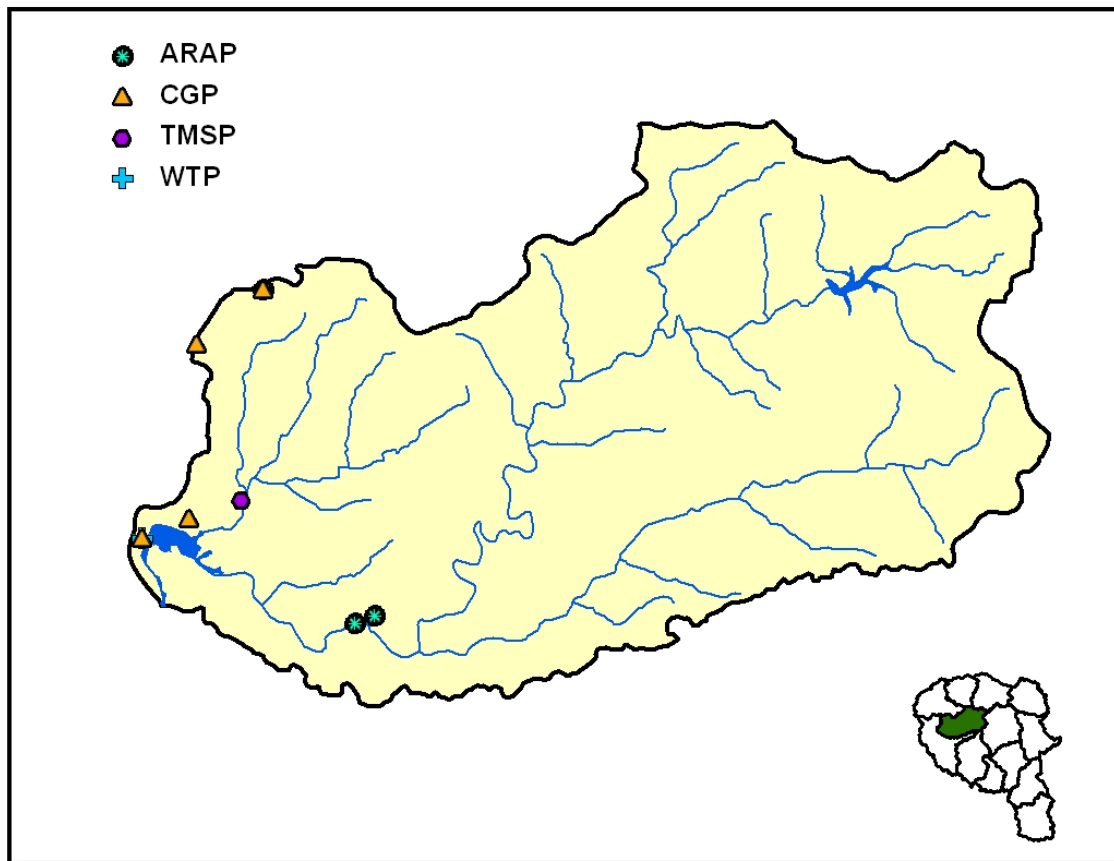


Figure 4-101. Location of Permits Issued in Subwatershed 051302020108. More information, including the names of facilities, is provided in Appendix IV.

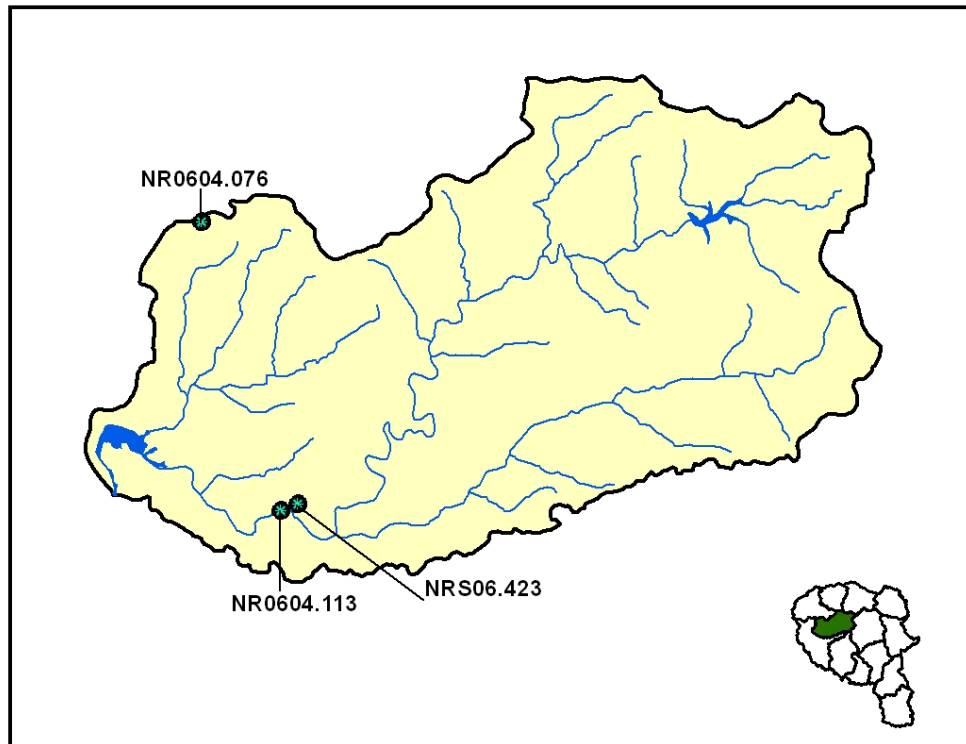


Figure 4-102. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020108. More information is provided in Appendix IV.

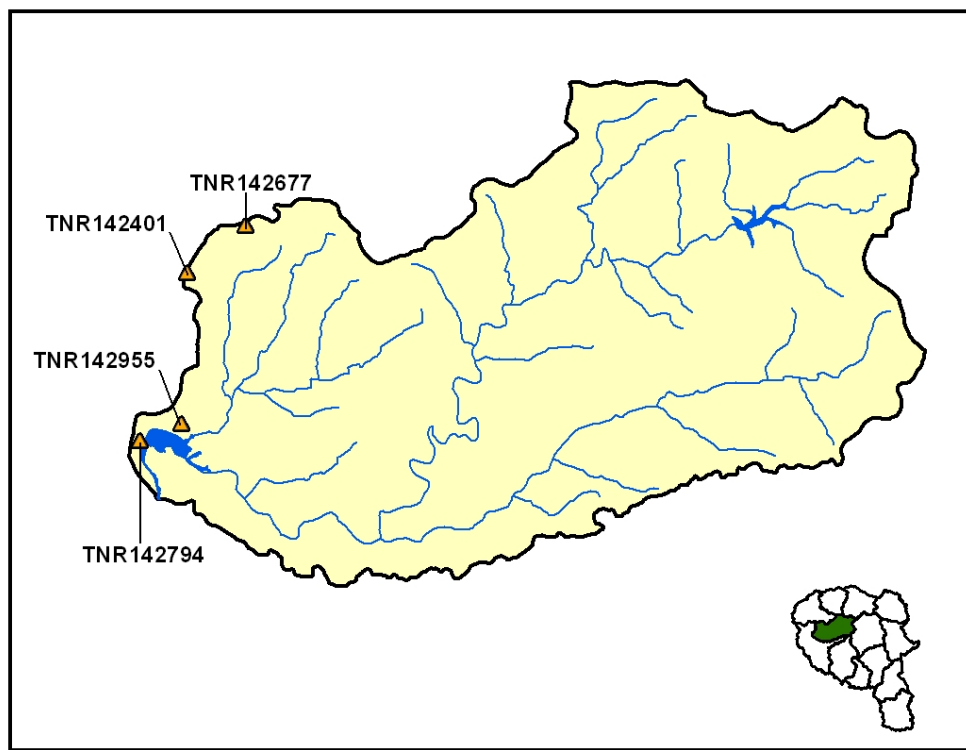


Figure 4-103. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020108. More information is provided in Appendix IV.

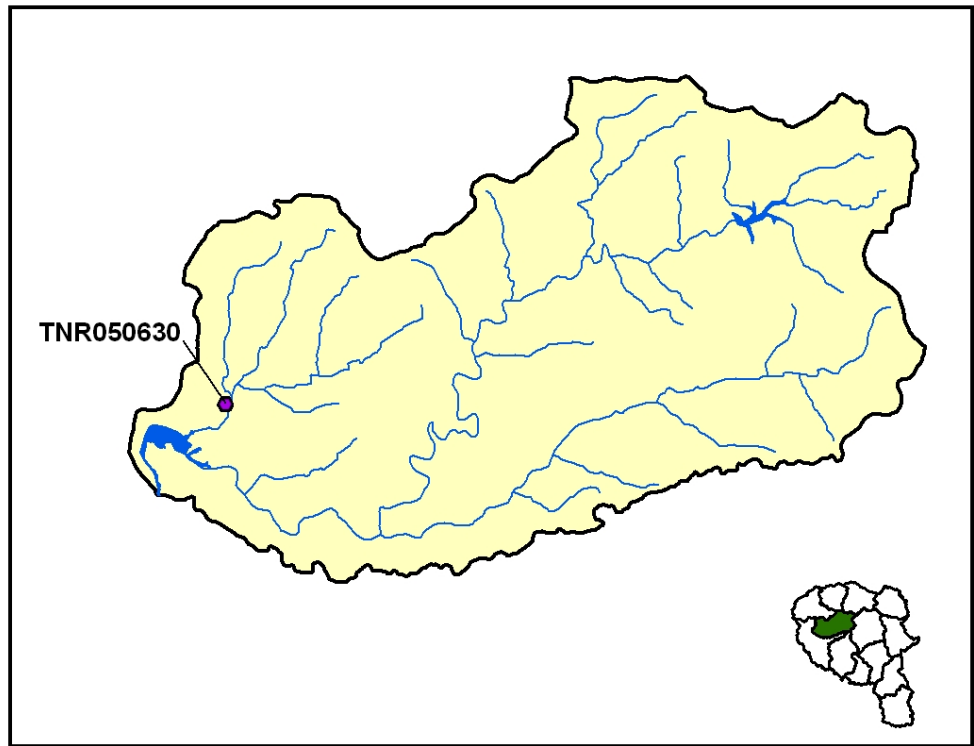


Figure 4-104. Location of TMSP (Tennessee Multi Sector Permits) Sites in Subwatershed 051302020108. More information is provided in Appendix IV.

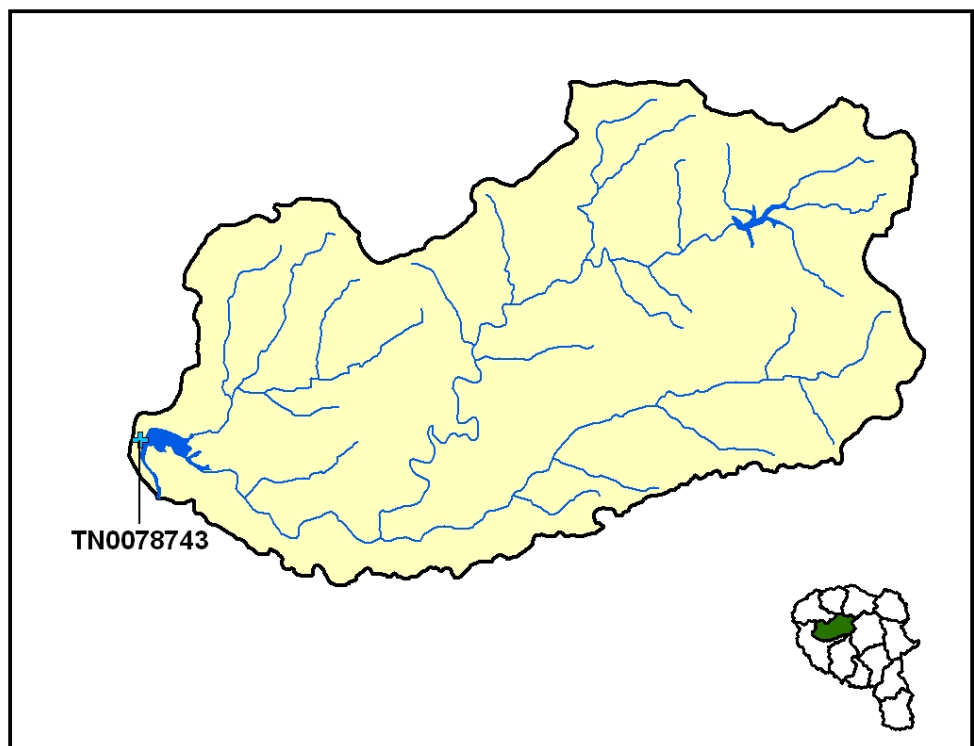


Figure 4-105. Location of Active WTP Facilities in Subwatershed 051302020108. More information, including the names of facilities, is provided in Appendix IV.

4.2.H.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Davidson		9,207		1,572	73	

Table 4-47. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Davidson	108.7	108.1	2.3	9.7

Table 4-48. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	11.49
Corn (Row Crops)	8.53
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.73
Grass (Pastureland)	0.60
Other Cropland not Planted	0.52
Legume (Hayland)	0.38
Grass (Hayland)	0.34
Legume Grass (Hayland)	0.29
Farmsteads and Ranch Headquarters	0.25

Table 4-49. Annual Estimated Total Soil Loss in Subwatershed 051302020108.

4.2.I. 051302020201 (Mill Creek, Upper).

4.2.I.i. General Description.

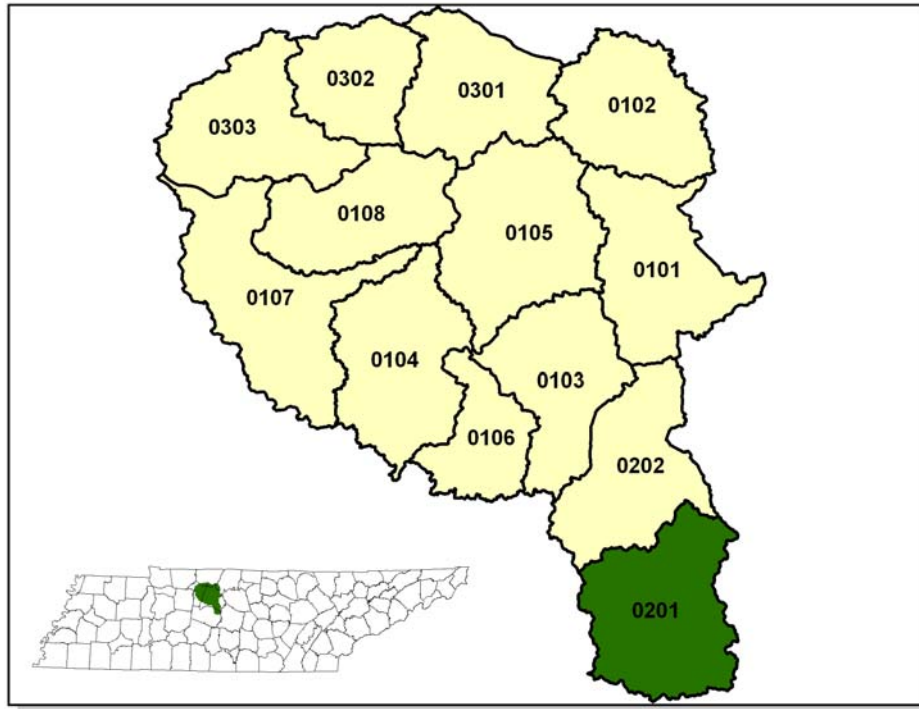


Figure 4-106. Location of Subwatershed 051302020201. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

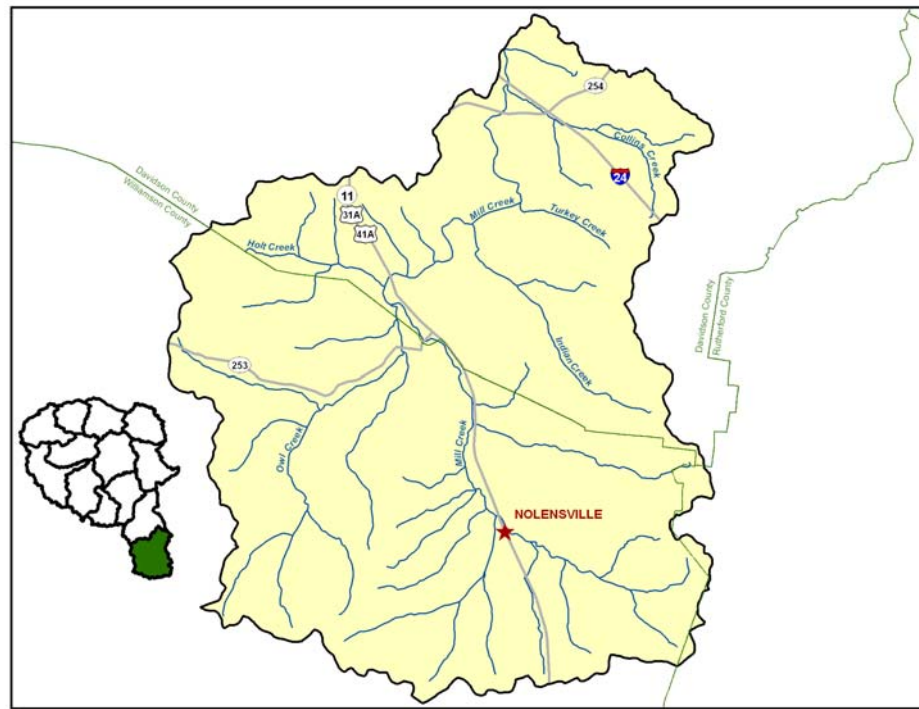


Figure 4-107. Locational Details of Subwatershed 051302020201.

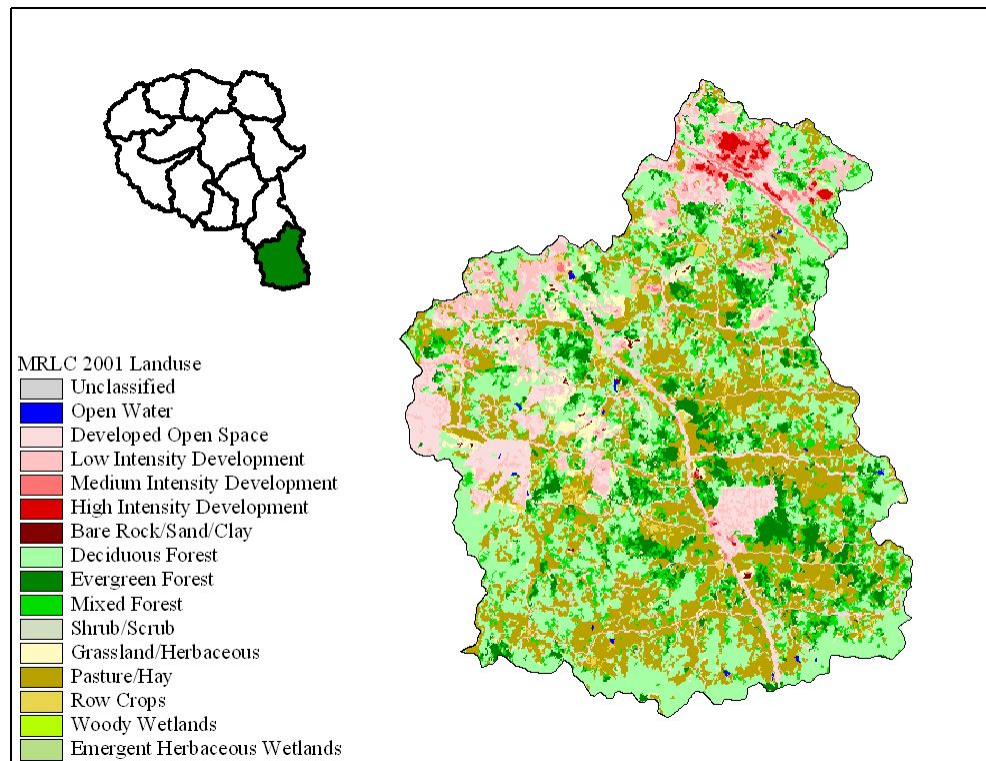


Figure 4-108. Illustration of Land Use Distribution in Subwatershed 051302020201.

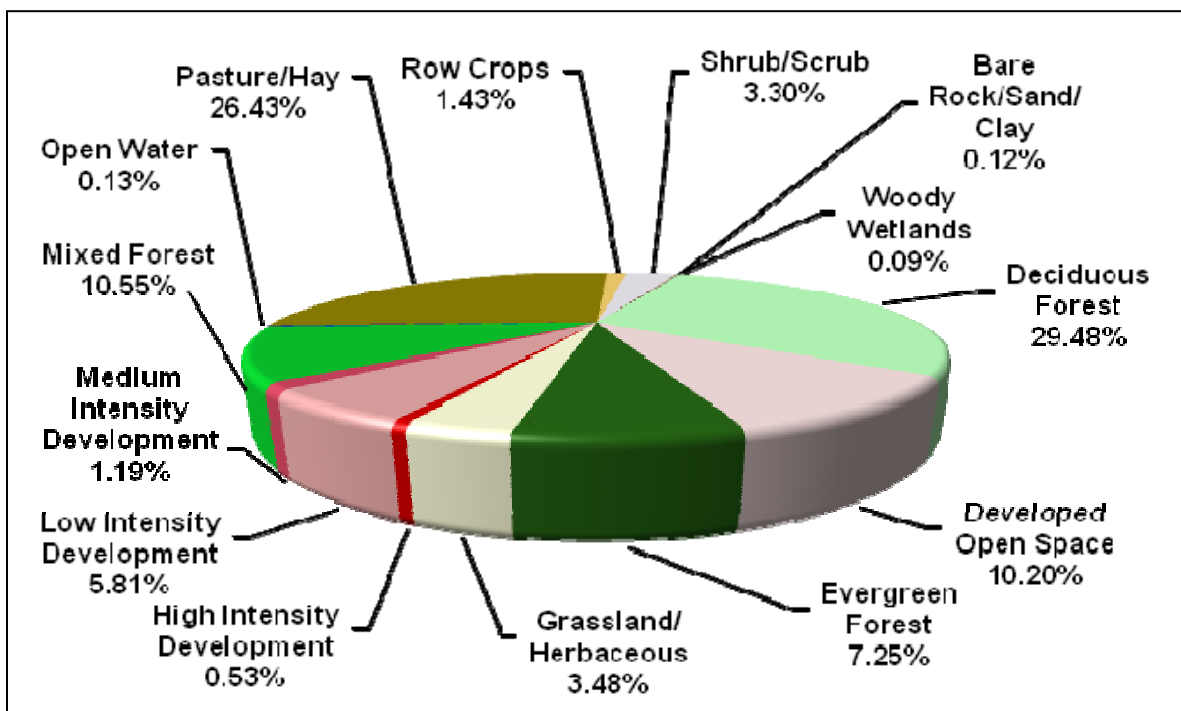


Figure 4-109. Land Use Distribution in Subwatershed 051302020201. More information is provided in Appendix IV.

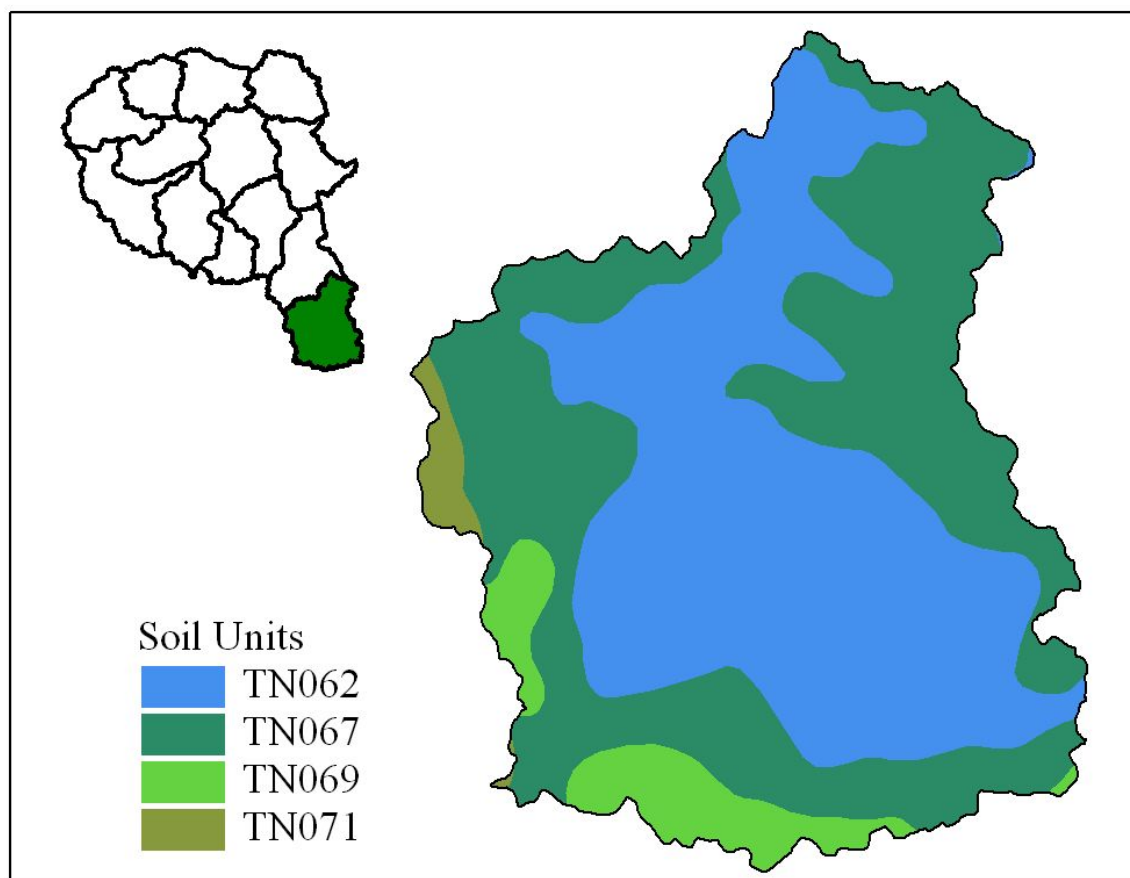


Figure 4-110. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020201.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN062	0.00	C	0.98	4.40	Clay Loam	0.26
TN067	2.00	C	2.69	5.51	Silty Loam	0.35
TN069	0.00	C	2.06	5.36	Loam	0.34
TN071	0.00	C	2.37	5.70	Silty Loam	0.33

Table 4-50. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020201. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Davidson	510,784	535,032	569,891	3.86	19,720	20,656	22,001	11.60
Williamson	81,021	111,453	126,638	6.54	5,300	7,291	8,285	56.30
Totals	591,805	646,485	696,529		25,020	27,947	30,286	21.00

Table 4-51. Population Estimates in Subwatershed 051302020201.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Brentwood	Williamson	16,392	5,514	3,195	2,319	0
La Vergne	Williamson	7,499	2,810	2,299	451	60
Smyrna	Williamson	13,647	5,312	4,959	346	7
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		526,056	233,157	214,093	18,692	372

Table 4-52. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020201.

4.2.I.ii. USGS Gaging Stations and STORET Sites.

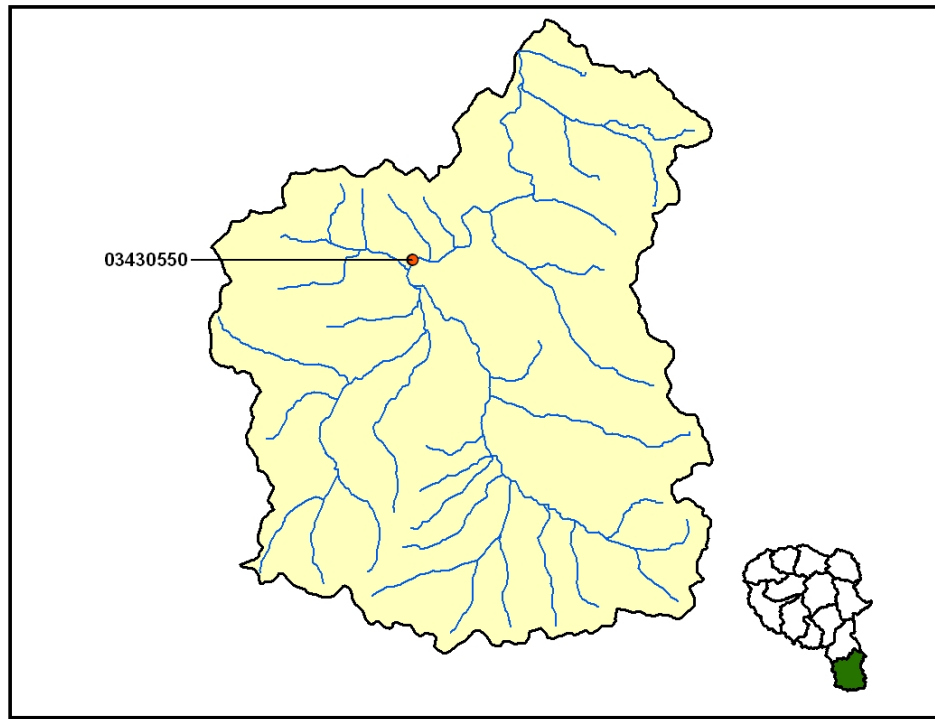


Figure 4-111. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020201. More information is provided in Appendix IV.

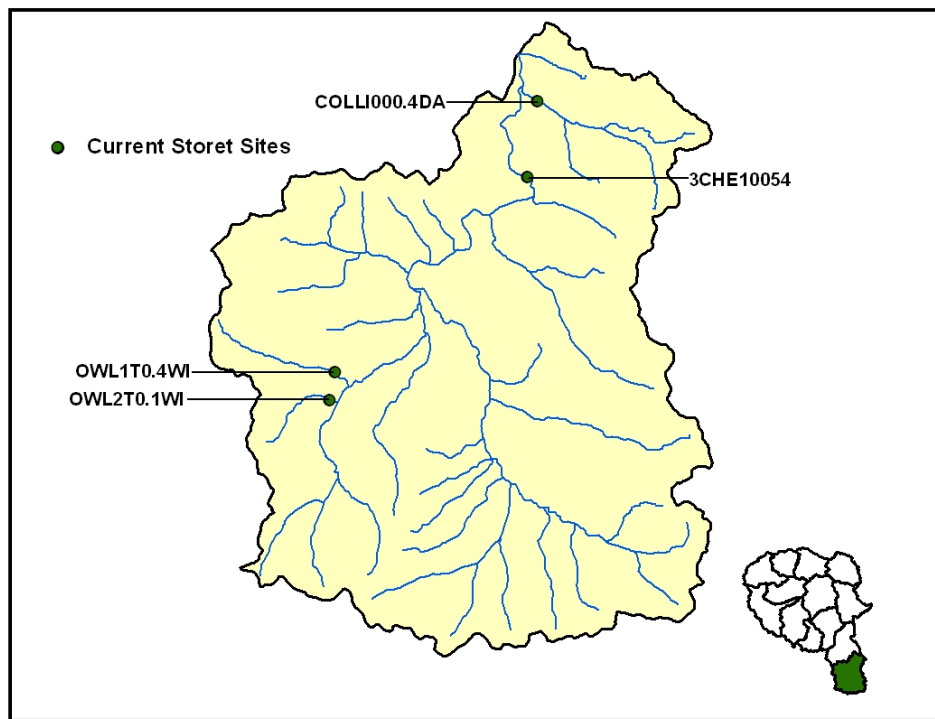


Figure 4-112. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020201. More information, including site names and locations, is provided in Appendix IV.

4.2.1.iii. Permitted Activities.

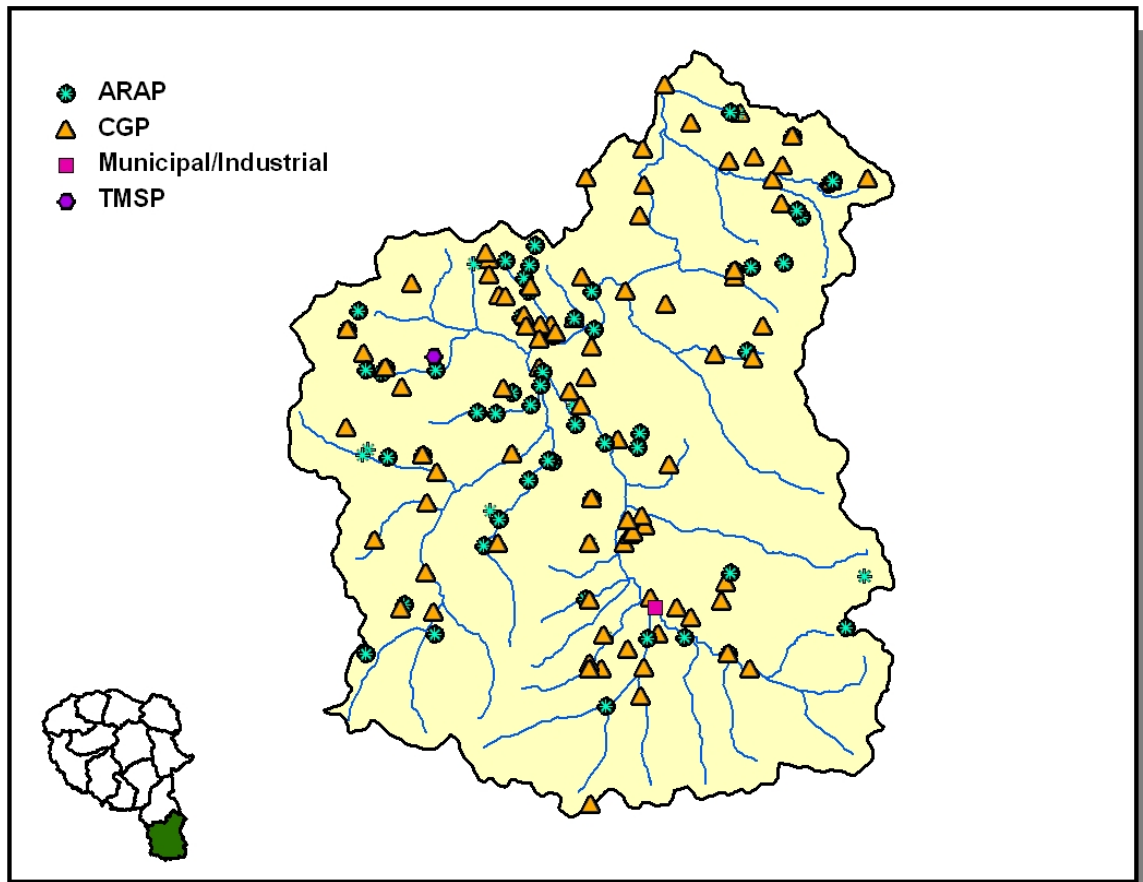


Figure 4-113. Location of Permits Issued in Subwatershed 0513020201. More information, including the names of facilities, is provided in Appendix IV.

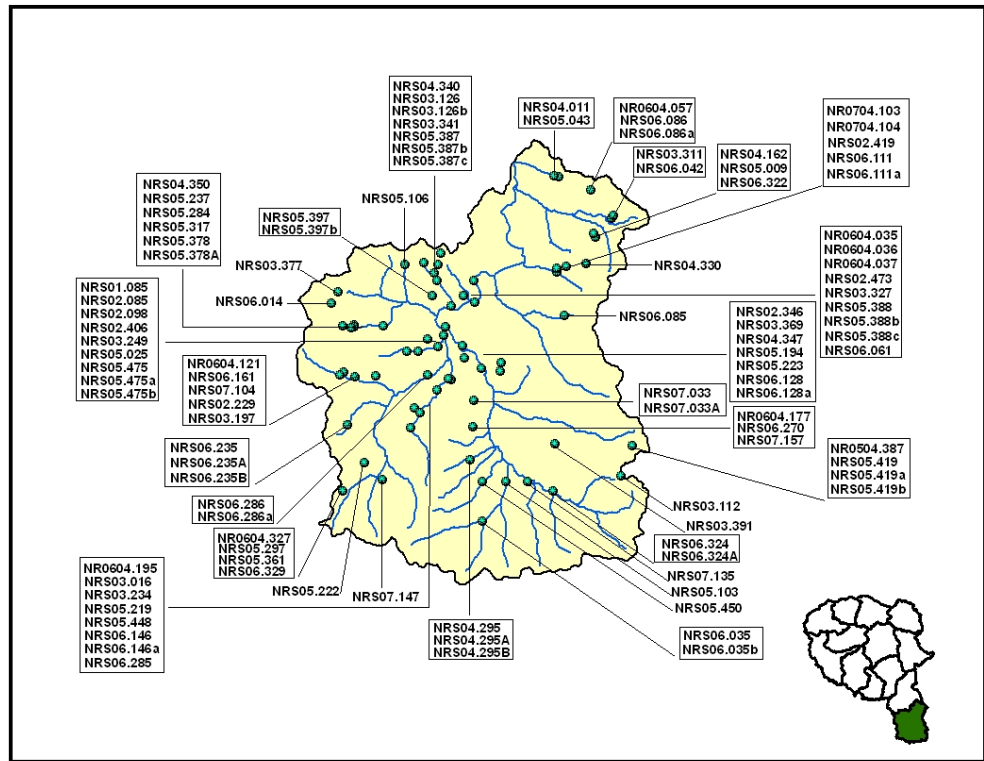


Figure 4-114. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020201. More information is provided in Appendix IV.

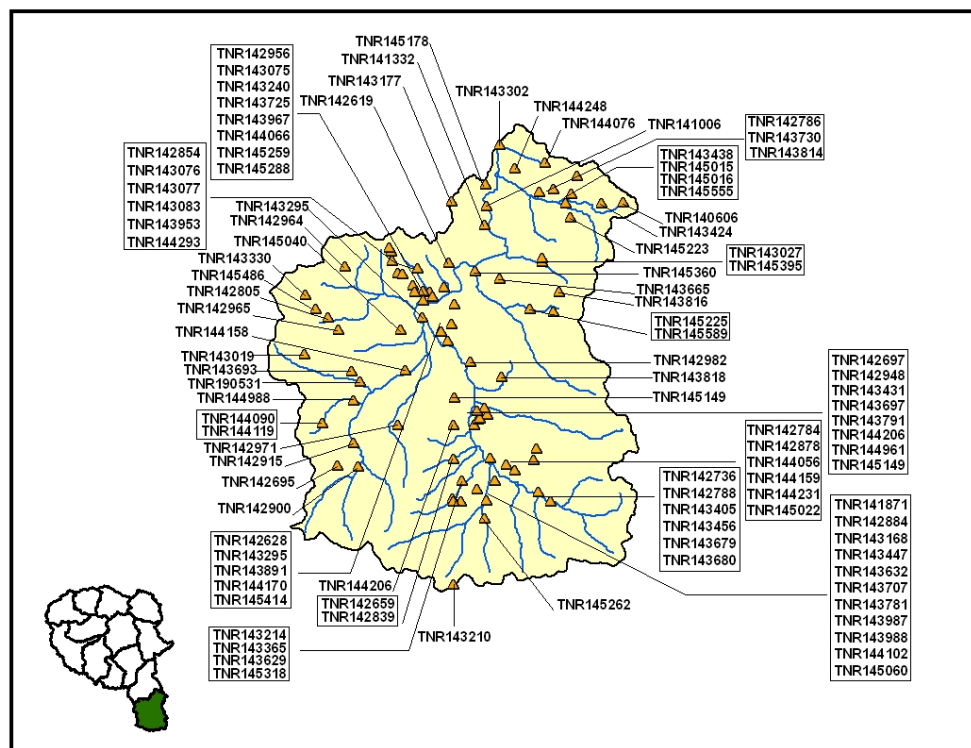


Figure 4-115. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020201. More information is provided in Appendix IV.

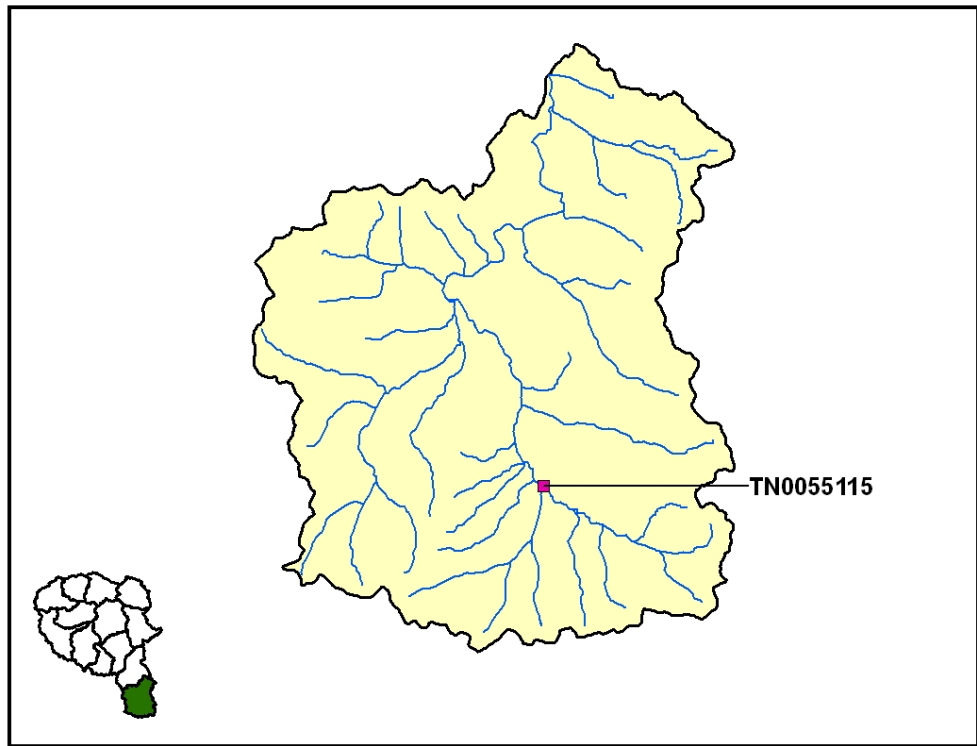


Figure 4-116. Location of permitted MUNICIPAL and INDUSTRIAL facilities in subwatershed 051302020201. More information, including the name of the facility is provided in Appendix IV.

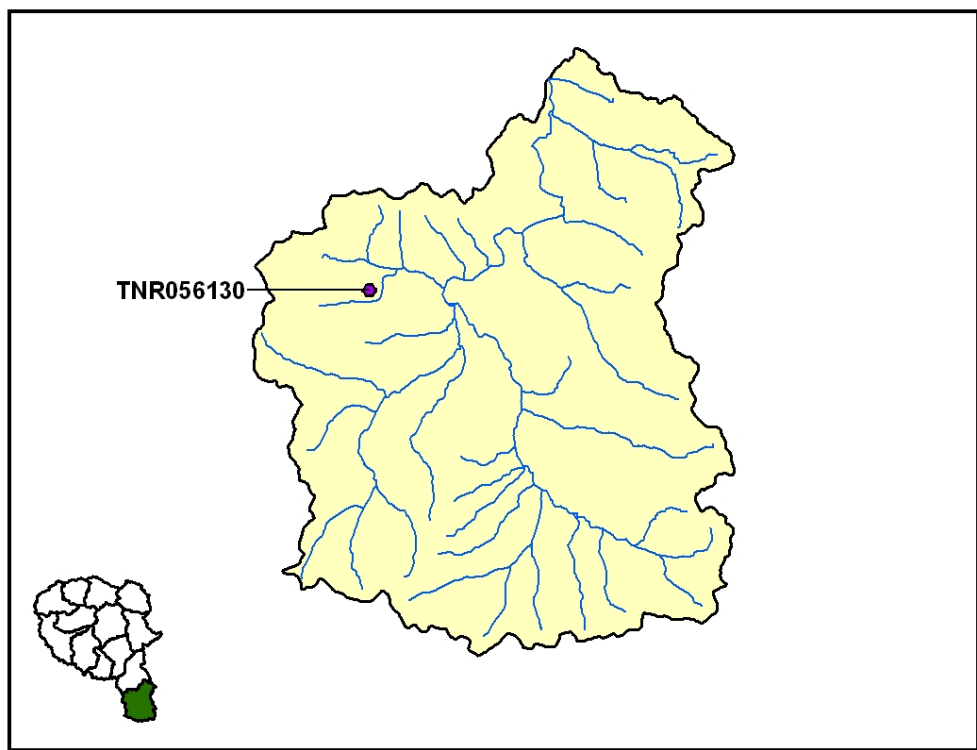


Figure 4-117. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020201. More information is provided in Appendix IV.

4.2.I.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	
Rutherford	20,291	42,486	2,617	72,542	997	429
Williamson	24,771	47,826	2,078	746	2,728	695

Table 4-53. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-54. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	7.41
Tobacco (Row Crops)	6.75
Other Cropland not Planted	6.46
Corn (Row Crops)	5.39
Cotton (Row Crops)	4.79
All Other Close Grown Cropland	2.26
Wheat (Close Grown Cropland)	1.27
Legume (Hayland)	0.98
Grass (Pastureland)	0.53
Berry (Horticultural)	0.47
Grass Forbs Legumes Mixed (Pastureland)	0.46
Legume (Pastureland)	0.33
Farmsteads and Ranch Headquarters	0.32
Legume Grass (Hayland)	0.14
Conservation Reserve Program Land	0.12
Other Land in Farms	0.12
Grass (Hayland)	0.10

Table 4-55. Annual Estimated Total Soil Loss in Subwatershed 051302020201.

4.2.J. 051302020202 (Mill Creek, Lower).

4.2.J.i. General Description.

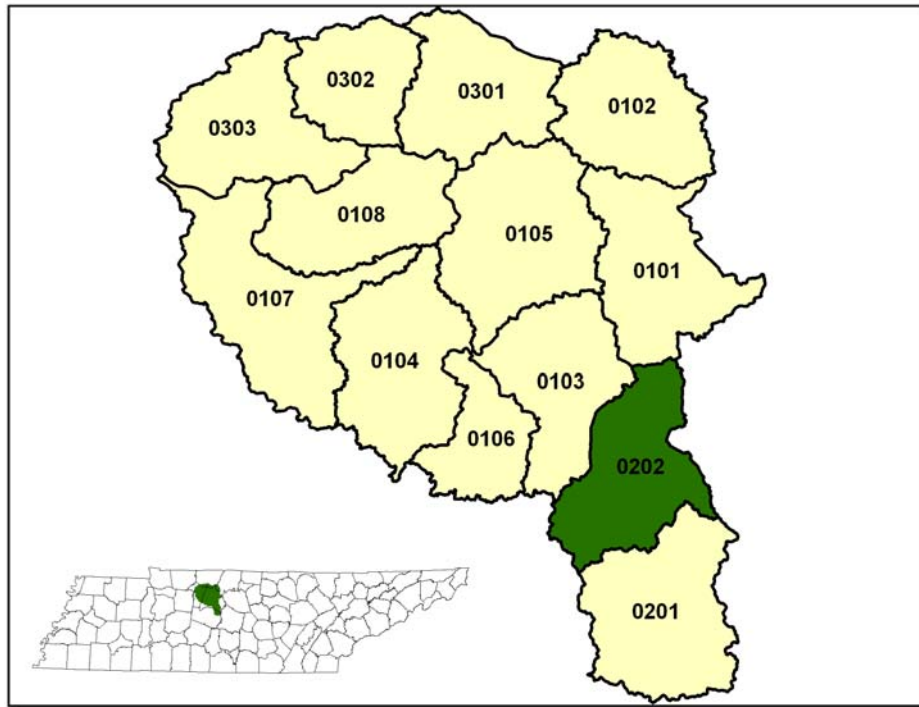


Figure 4-118. Location of Subwatershed 051302020202. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

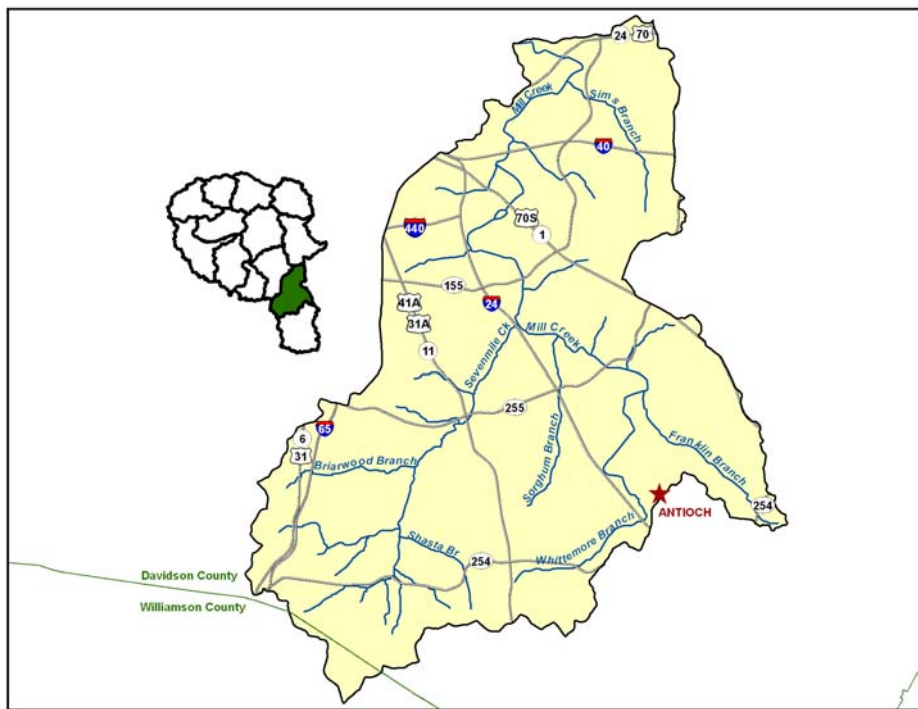


Figure 4-119. Locational Details of Subwatershed 051302020202.

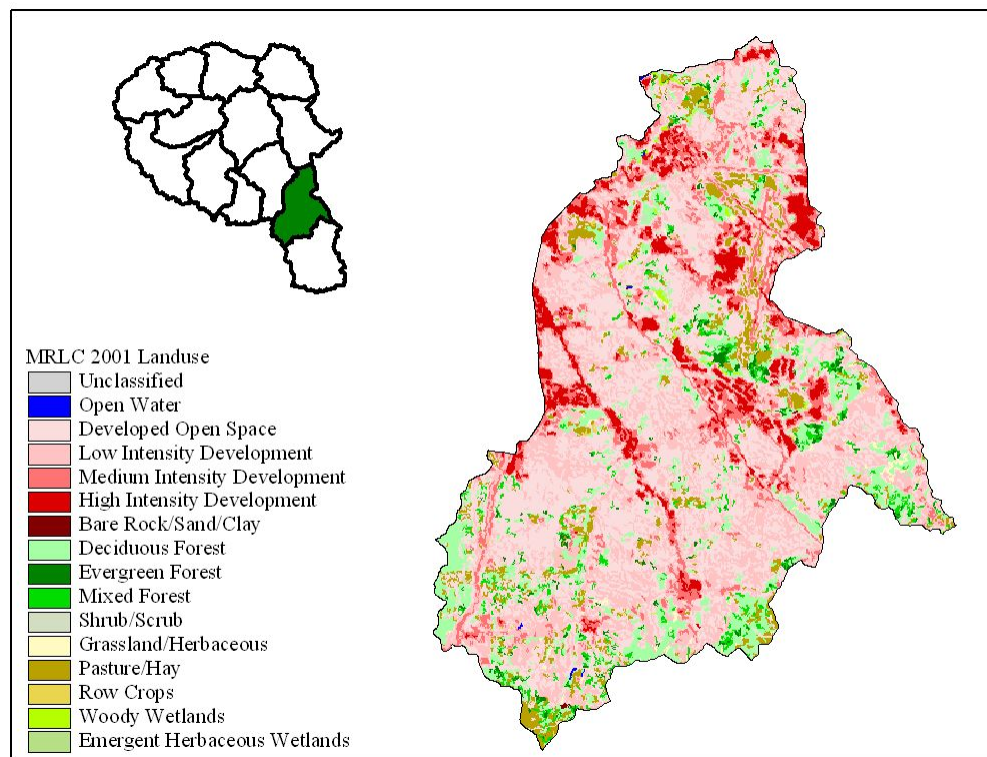


Figure 4-120. Illustration of Land Use Distribution in Subwatershed 051302020202.

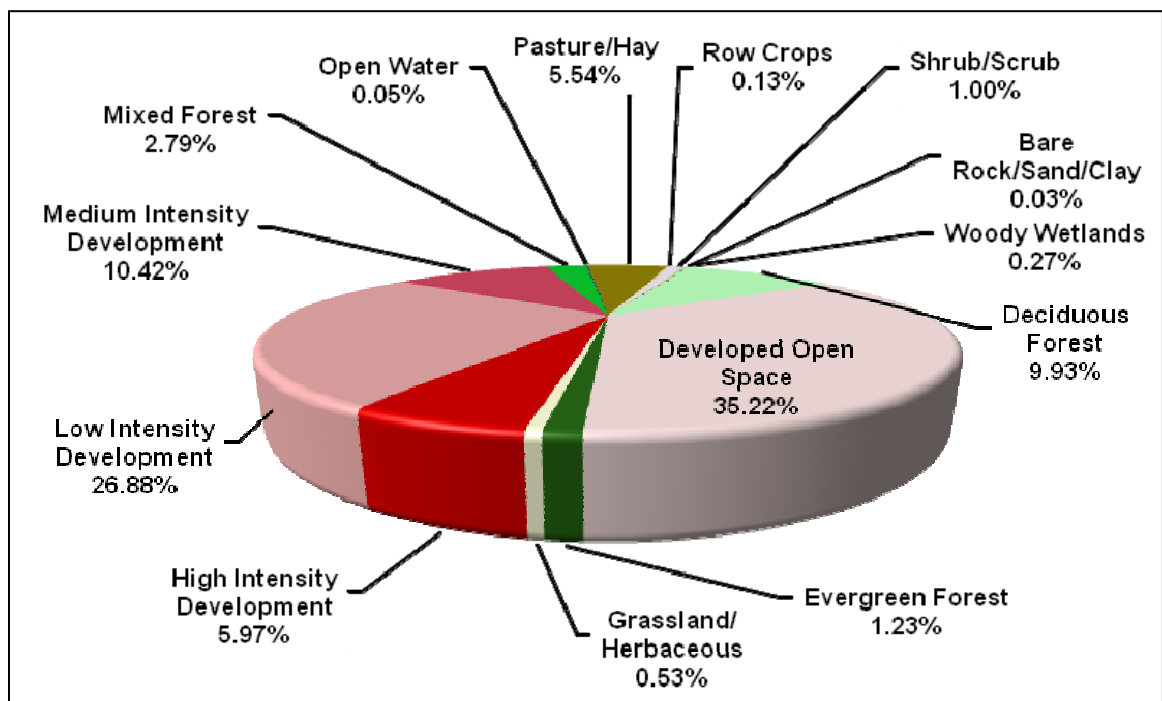


Figure 4-121. Land Use Distribution in Subwatershed 051302020202. More information is provided in Appendix IV.

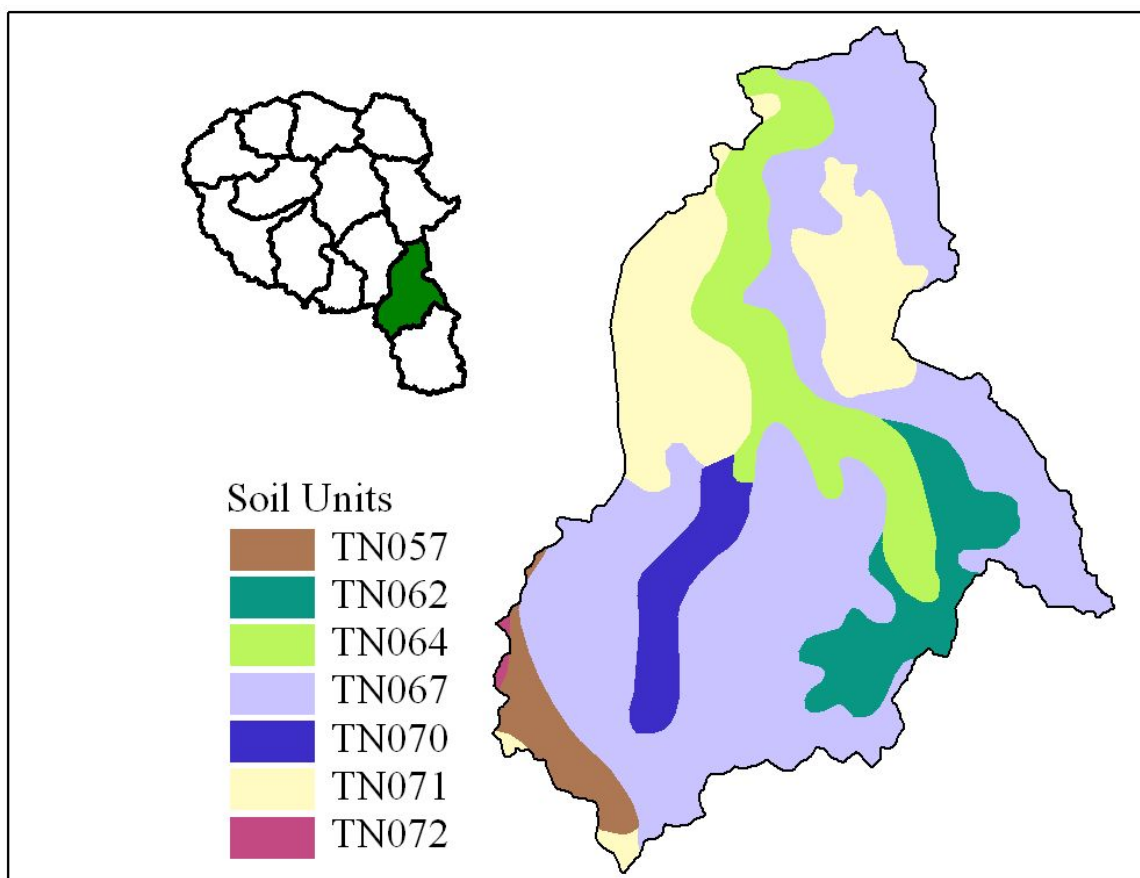


Figure 4-122. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020202.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN062	0.00	C	0.98	4.40	Clay Loam	0.26
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN067	2.00	C	2.69	5.51	Silty Loam	0.35
TN070	0.00	B	1.38	5.76	Loam	0.33
TN071	0.00	C	2.37	5.70	Silty Loam	0.33
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-56. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020202. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Davidson	510,784	535,032	569,891	9.17	46,859	49,084	52,282	11.60
Williamson	81,021	111,453	126,638	0.23	185	255	289	56.20
Total	591,805	646,485	696,529		47,044	49,339	52,571	11.70

Table 4-57. Population Estimates in Subwatershed 051302020202.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Brentwood	Williamson	16,392	5,514	3,195	2,319	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Oak Hill	Davidson	4,301	1,788	990	798	0
Total		509,211	226,823	207,825	18,693	305

Table 4-58. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020202.

4.2.J.ii. USGS Gaging Stations and STORET Sites.



Figure 4-123. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020202. More information is provided in Appendix IV.

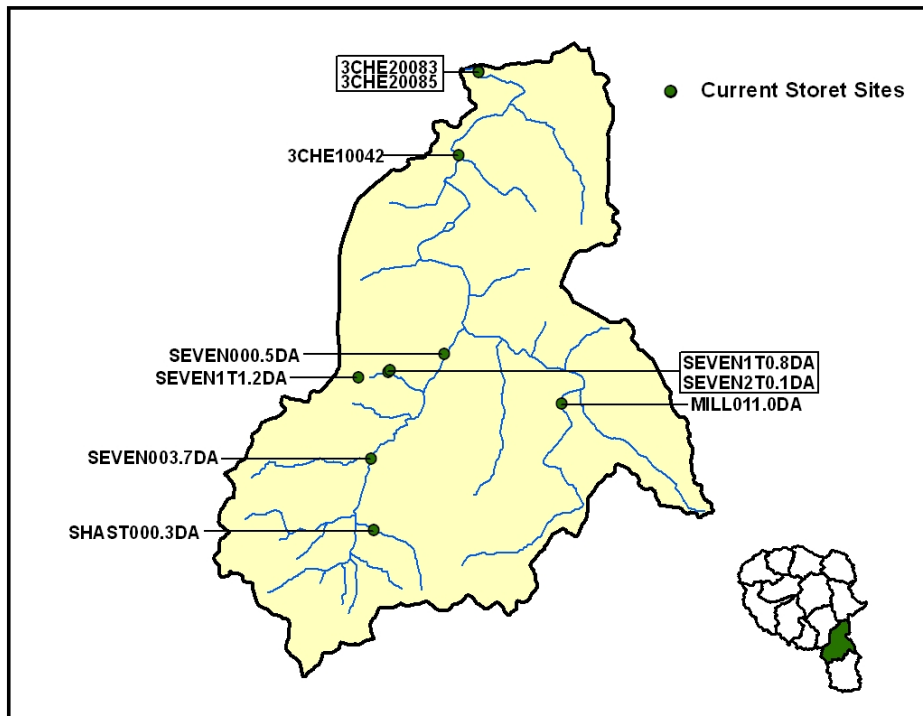


Figure 4-124. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020202. More information, including site names and locations, is provided in Appendix IV.

4.2.J.iii. Permitted Activities.

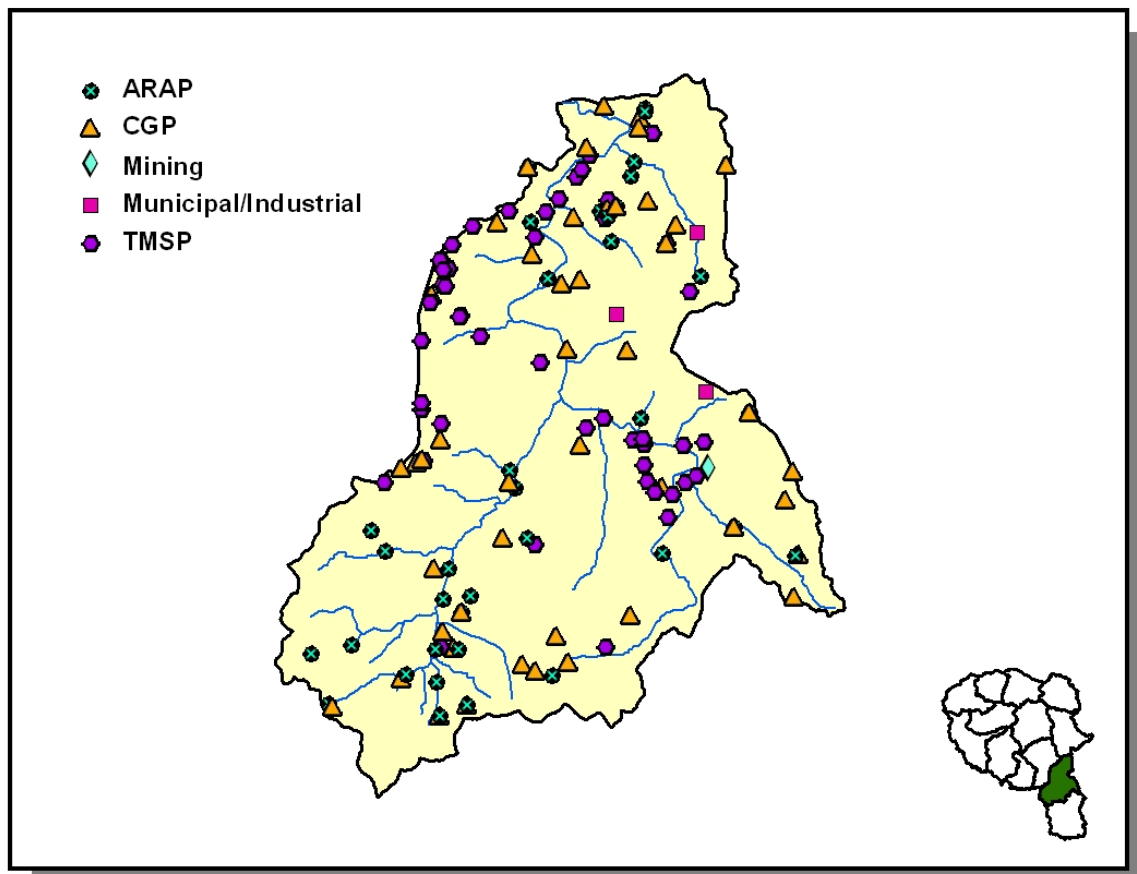


Figure 4-125. Location of Permits Issued in Subwatershed 051302020202. More information, including the names of facilities, is provided in Appendix IV.

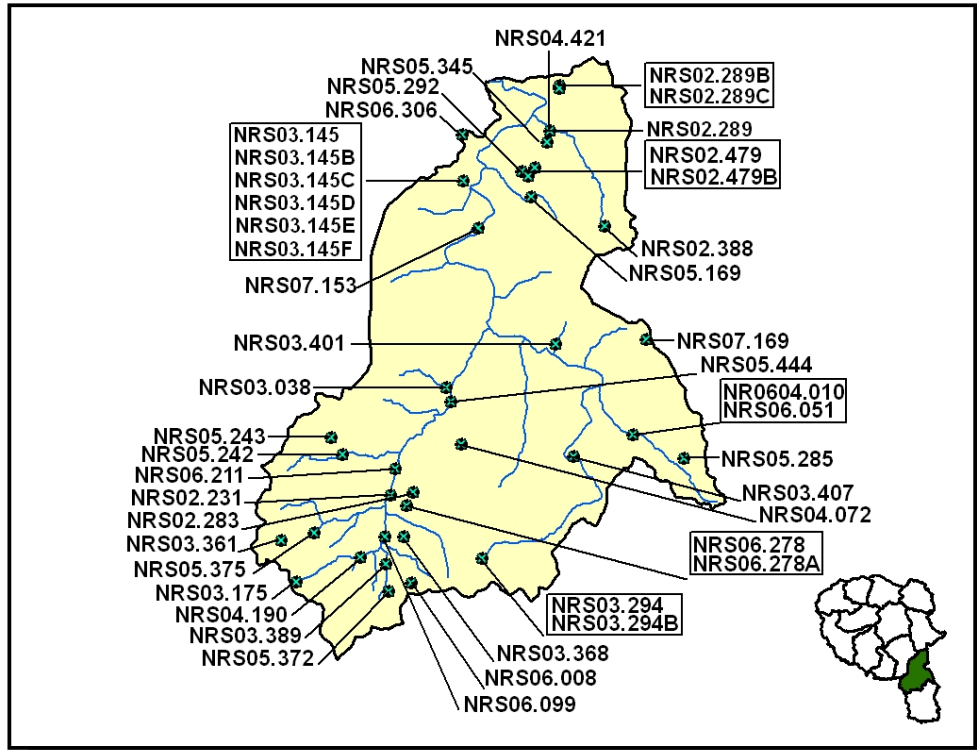


Figure 4-126. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020202. More information is provided in Appendix IV.

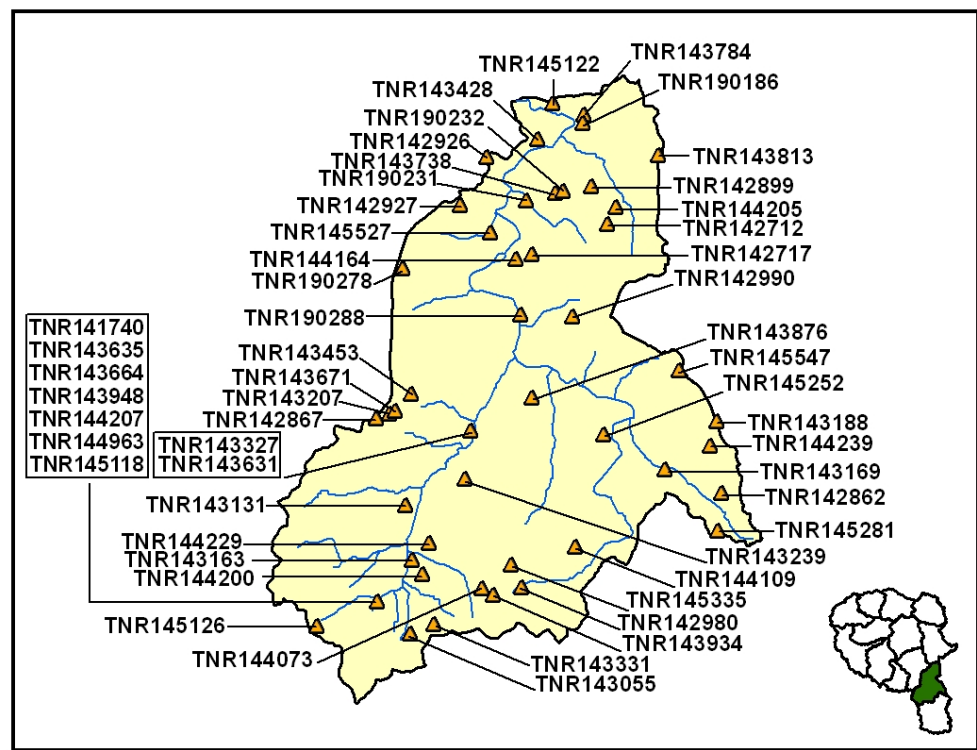


Figure 4-127. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020202. More information is provided in Appendix IV.

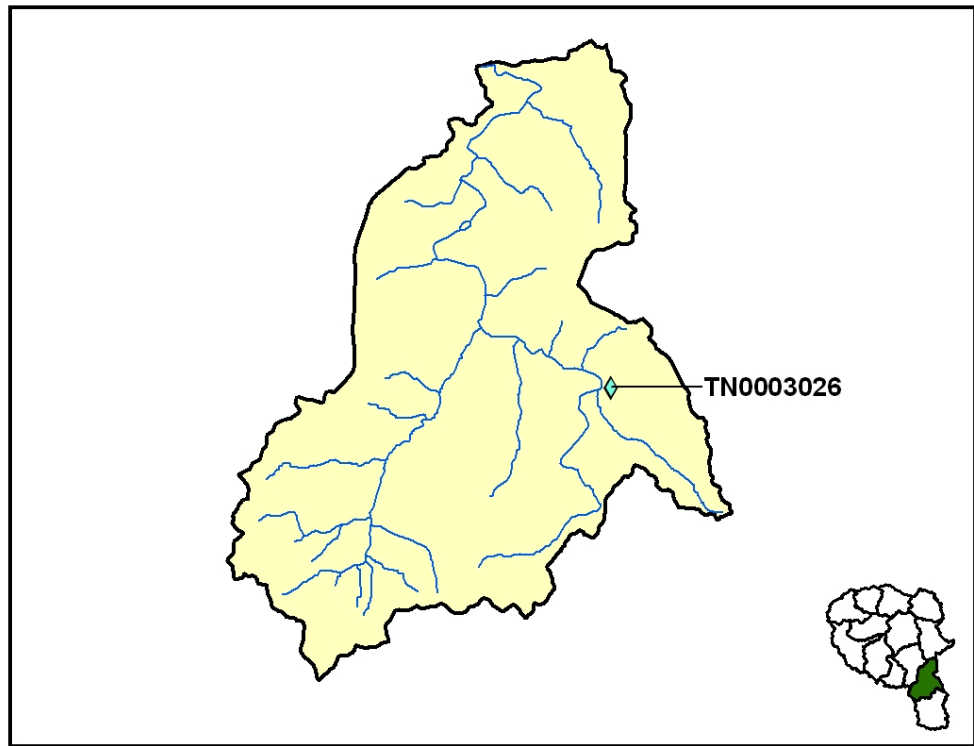


Figure 4-128. Location of permitted MINING facilities in Subwatershed 0513020202. More information is provided in Appendix IV.

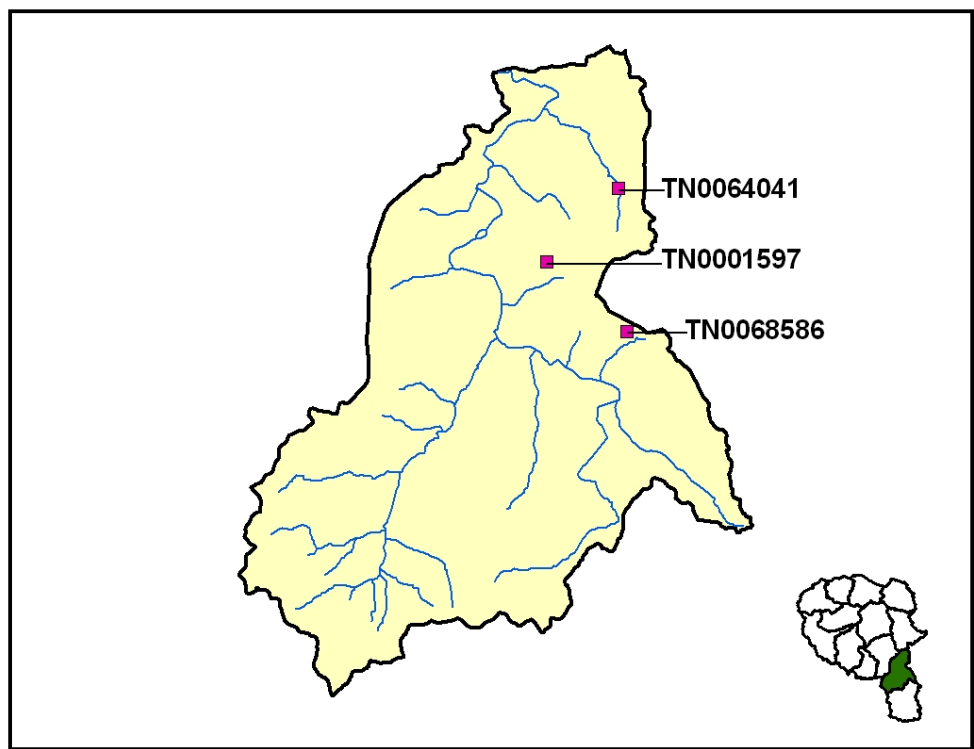


Figure 4-129. Location of permitted MUNICIPAL and INDUSTRIAL facilities in subwatershed 0513020202. More information, including the name of the facility is provided in Appendix IV.

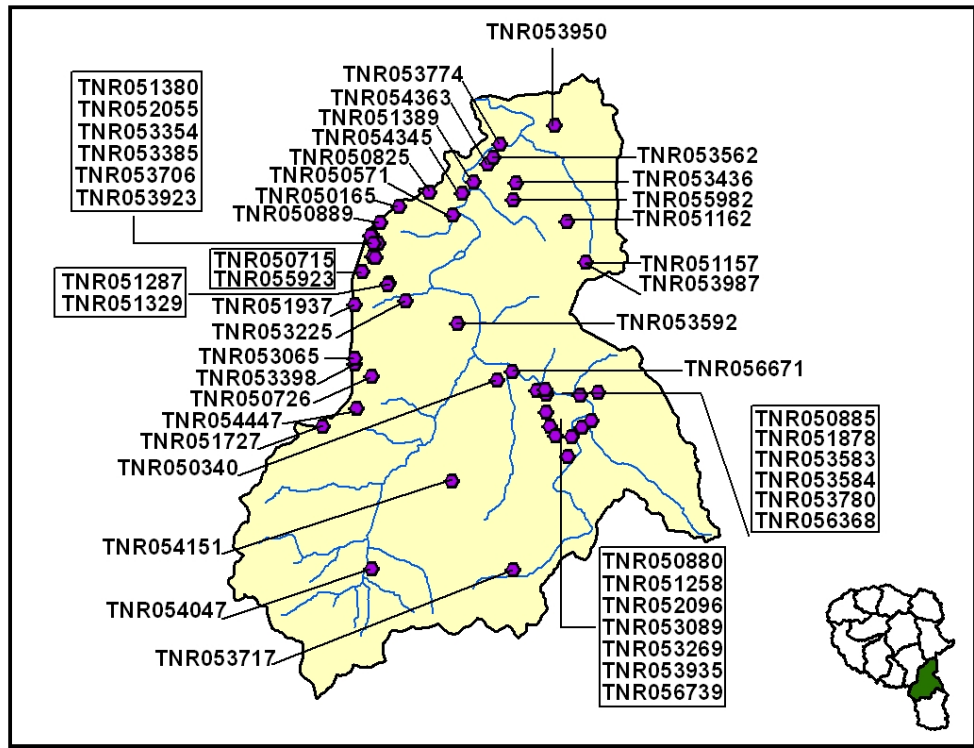


Figure 4-130. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020202. More information is provided in Appendix IV.

4.2.J.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	
Williamson	24,771	47,826	2,078	746	2,728	695

Table 4-59. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-60. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	14.7
Tobacco (Row Crops)	6.75
Other Cropland not Planted	6.46
Corn (Row Crops)	5.39
All Other Close Grown Cropland	2.26
Wheat (Close Grown Cropland)	1.27
Legume (Hayland)	0.98
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Legume (Pastureland)	0.33
Legume Grass (Hayland)	0.14
Other Land in Farms	0.12
Conservation Reserve Program Land	0.12
Grass (Hayland)	0.08

Table 4-61. Annual Estimated Total Soil Loss in Subwatershed 051302020202.

4.2.K. 051302020301 (Sycamore Creek, Upper).

4.2.K.i. General Description.

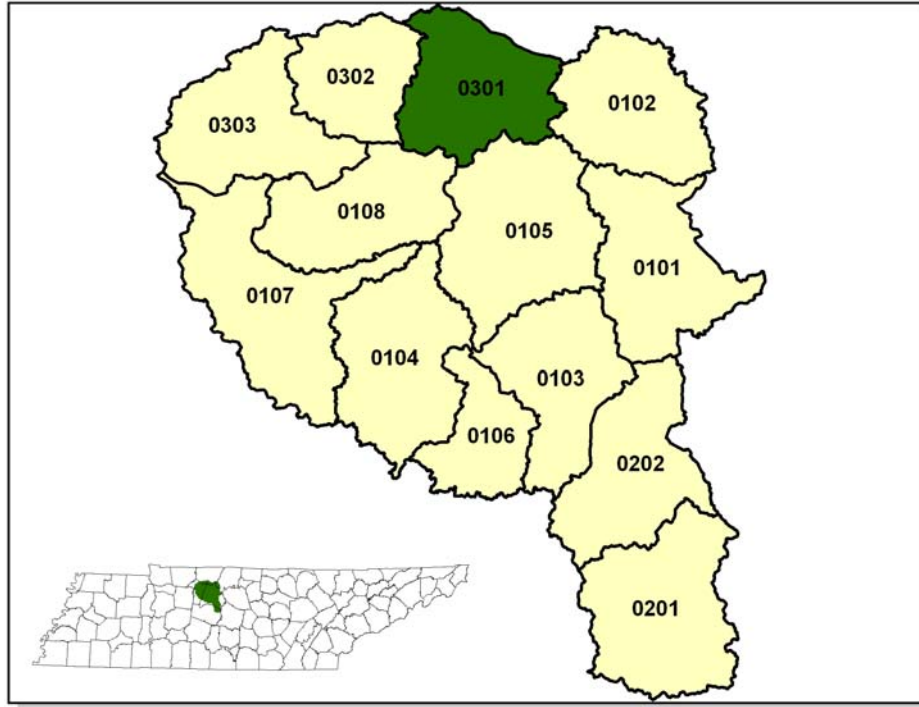


Figure 4-131. Location of Subwatershed 051302020301. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

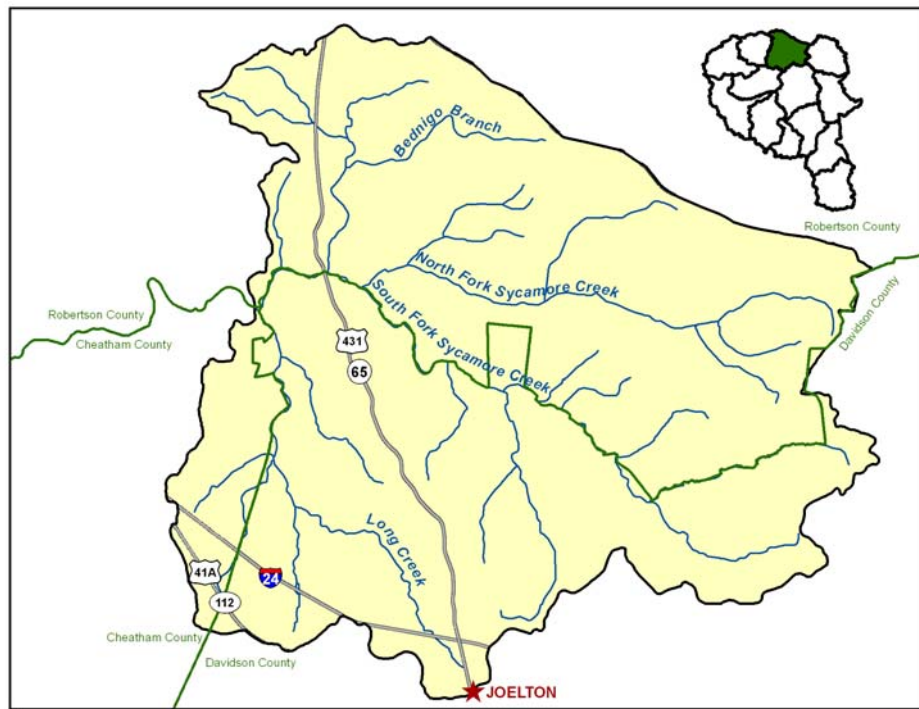


Figure 4-132. Locational Details of Subwatershed 051302020301.

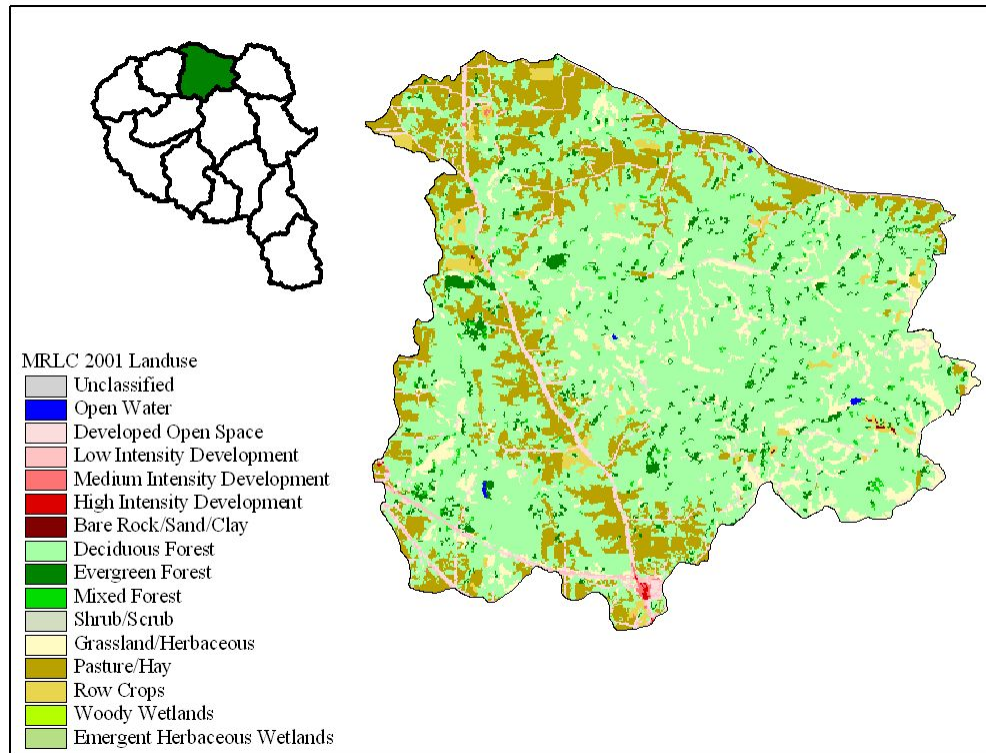


Figure 4-133. Illustration of Land Use Distribution in Subwatershed 051302020301.

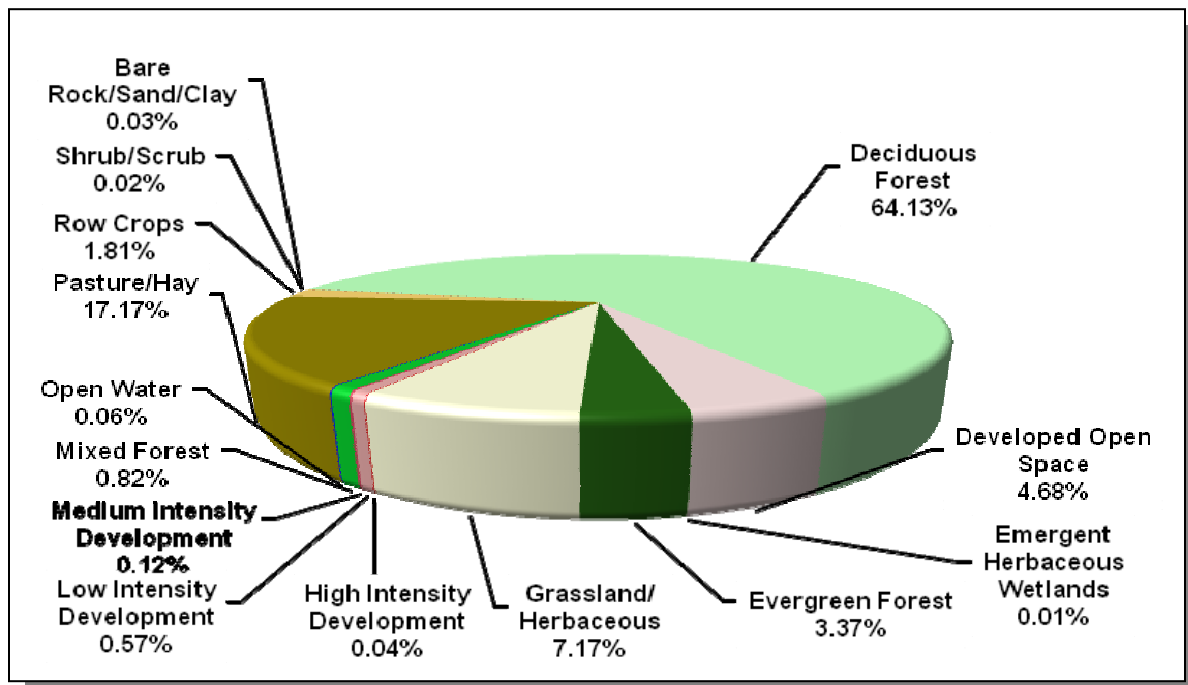


Figure 4-134. Land Use Distribution in Subwatershed 051302020301. More information is provided in Appendix IV.

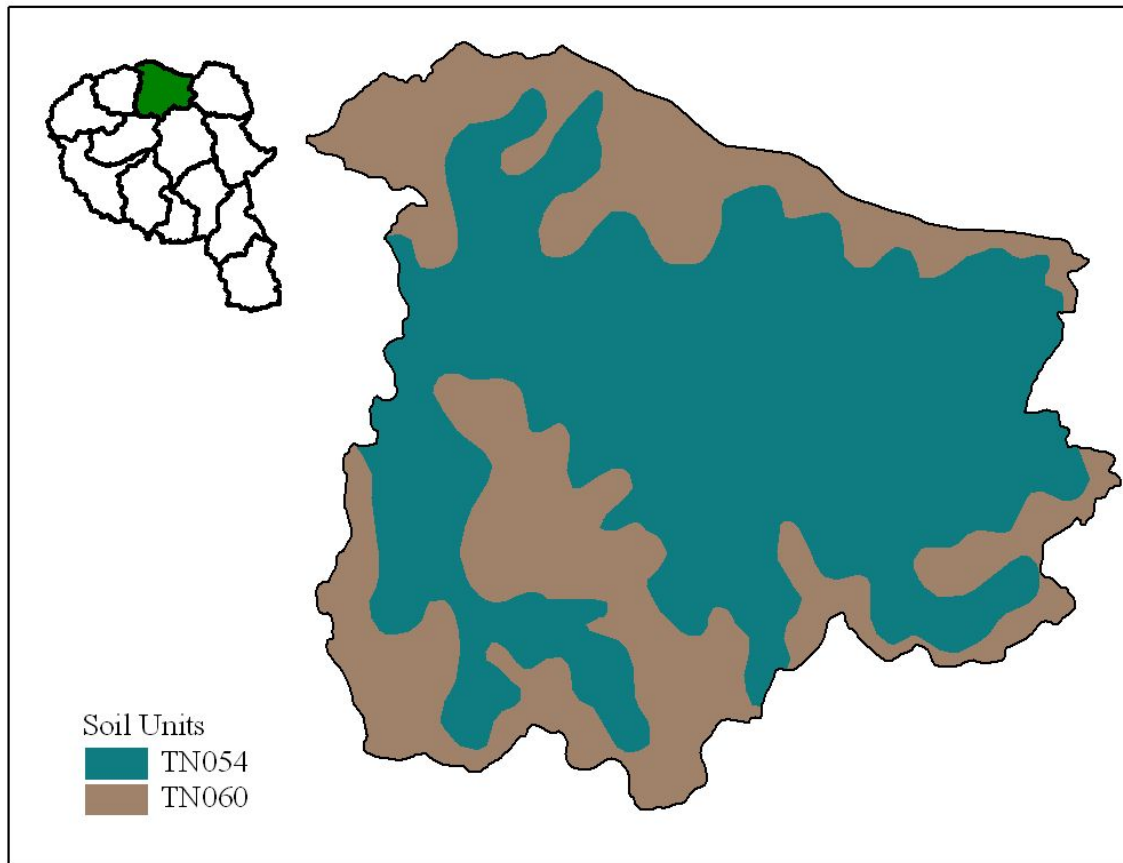


Figure 4-135. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020301.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39

Table 4-62. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020301. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cheatham	27,140	34,402	35,912	1.50	407	516	538	32.20
Davidson	510,784	535,032	569,891	3.20	16,360	17,136	18,253	11.60
Robertson	41,494	51,533	54,433	5.13	2,128	2,643	2,792	31.20
Total	579,418	620,967	660,236		18,895	20,295	21,583	14.20

Table 4-63. Population Estimates in Subwatershed 051302020301.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Ridgetop	Robertson	1,129	396	7	389	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		489,647	219,917	203,647	15,965	305

Table 4-64. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020301.

4.2.K.ii. USGS Gaging Stations and STORET Sites.

There are no USGS continuous record gaging stations located in subwatershed 051302020301.

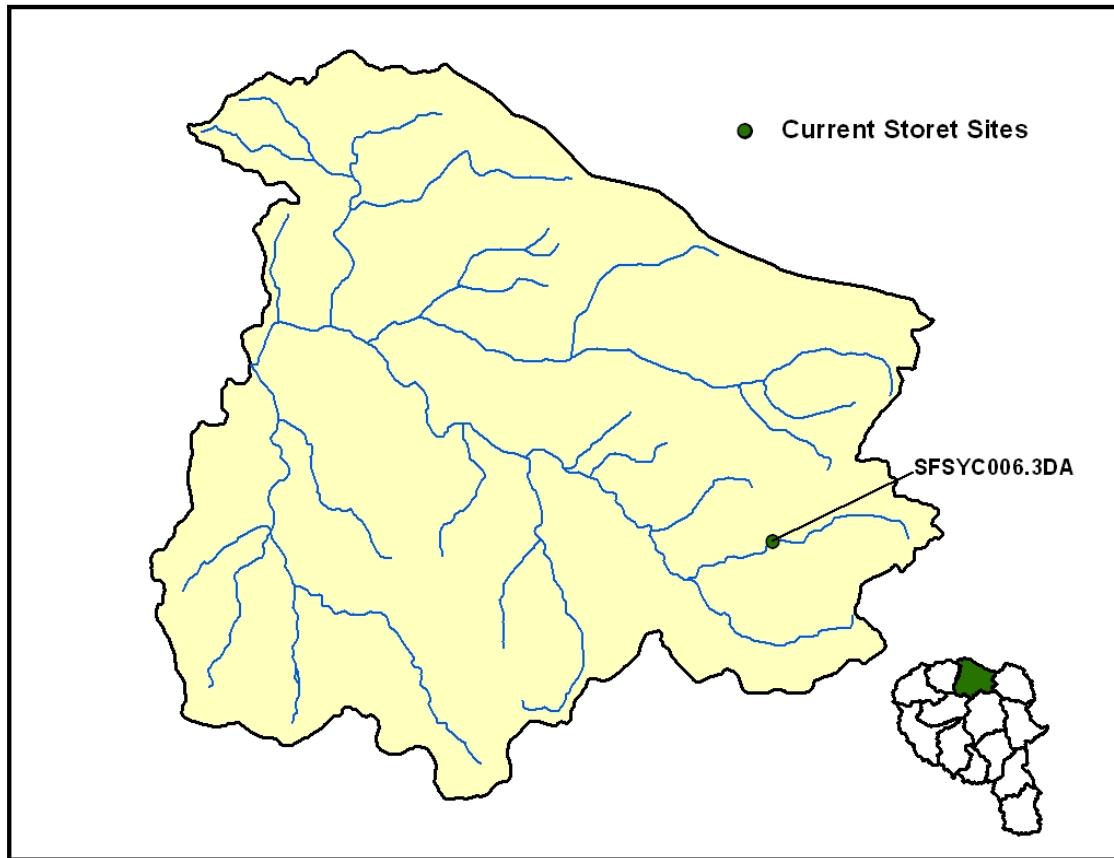


Figure 4-136. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020301. More information, including site names and locations, is provided in Appendix IV.

4.2.K.iii. Permitted Activities.

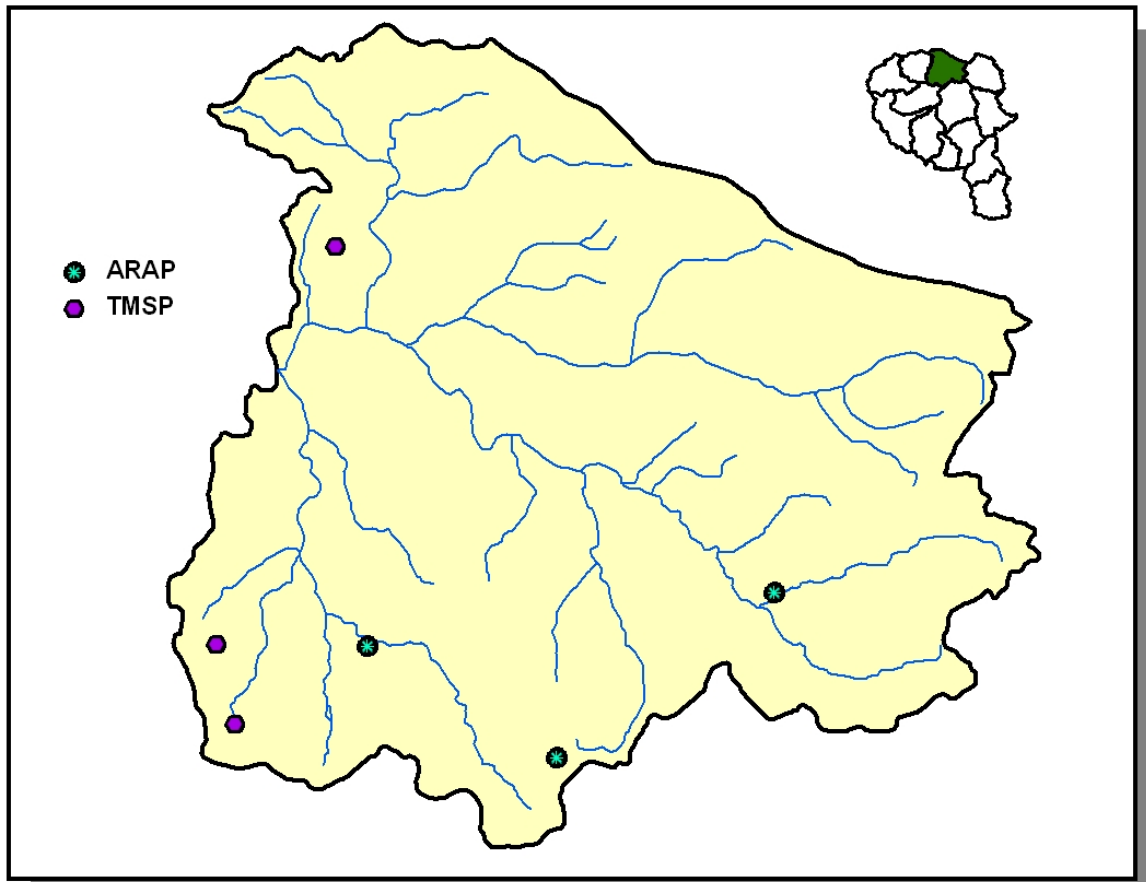


Figure 4-137. Location of Permits Issued in Subwatershed 051302020301. More information, including the names of facilities, is provided in Appendix IV.

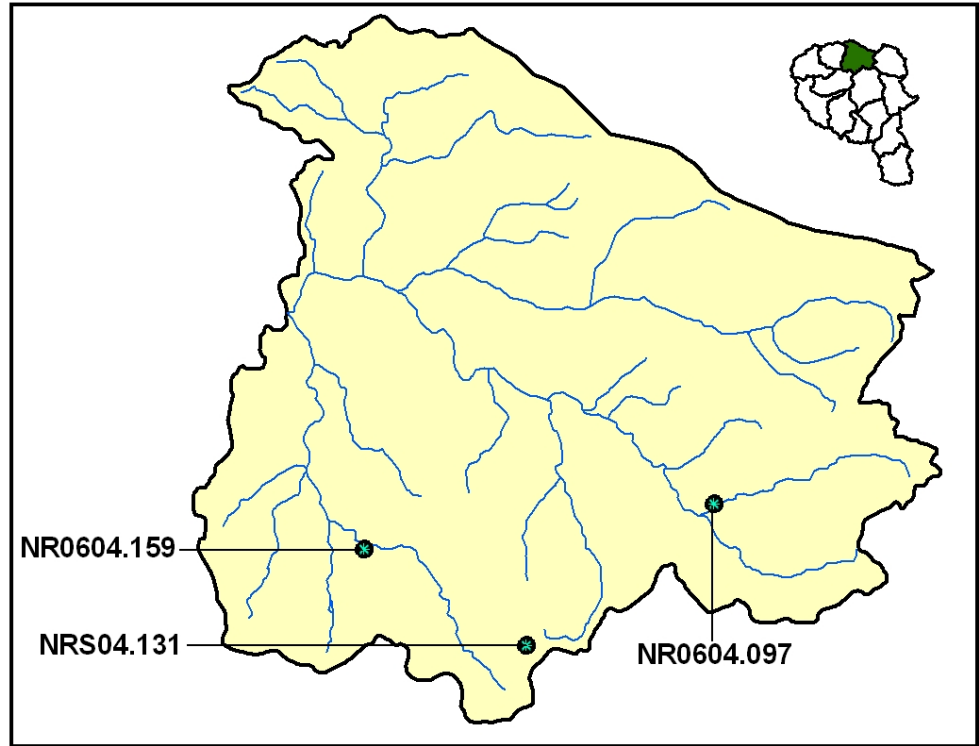


Figure 4-138. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020301. More information is provided in Appendix IV.

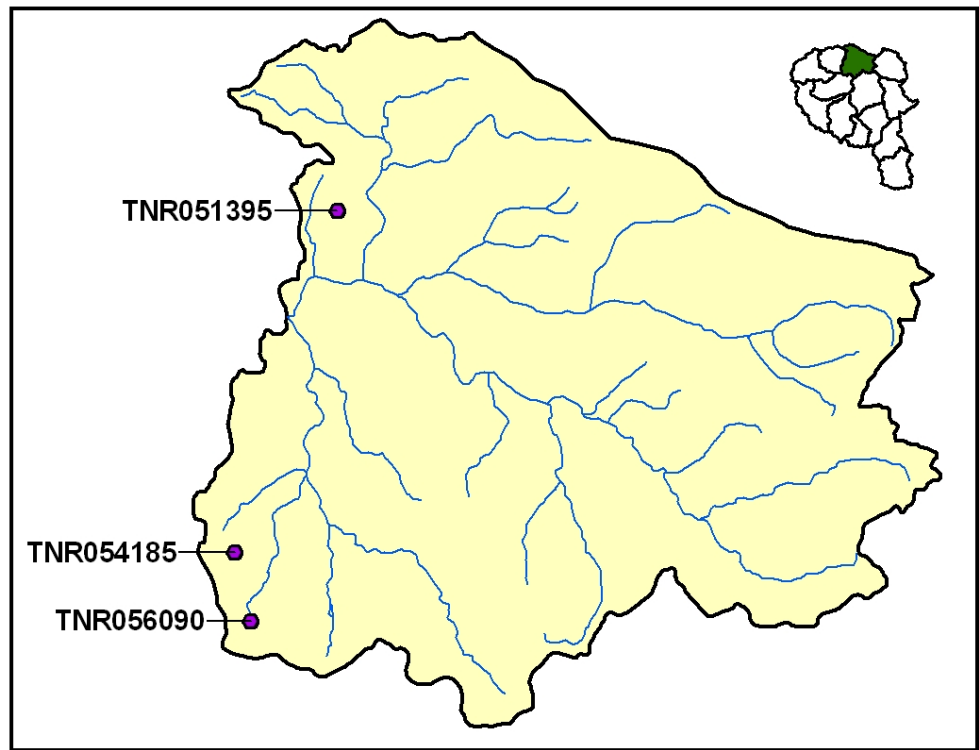


Figure 4-139. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020301. More information is provided in Appendix IV.

4.2.K.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Davidson		9,207		1,572	73	
Robertson	22,502	47,887	3,478	31	6,982	279

Table 4-65. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Davidson	108.7	108.1	2.3	9.7
Robertson	53	53	2.2	9.7

Table 4-66. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	11.87
Soybeans (Row Crops)	11.77
Other Cropland not Planted	8.20
Corn (Row Crops)	5.67
All Other Close Grown Cropland	2.26
Wheat (Close Grown Cropland)	1.68
Legume (Hayland)	0.68
Farmsteads and Ranch Headquarters	0.66
Grass (Pastureland)	0.59
Grass Forbs Legumes Mixed (Pastureland)	0.50
Legume Grass (Hayland)	0.49
Conservation Reserve Program Land	0.36
Grass (Hayland)	0.28
Other Land in Farms	0.27

Table 4-67. Annual Estimated Total Soil Loss in Subwatershed 051302020301.

4.2.L. 051302020302 (Sycamore Creek, Middle).

4.2.L.i. General Description.

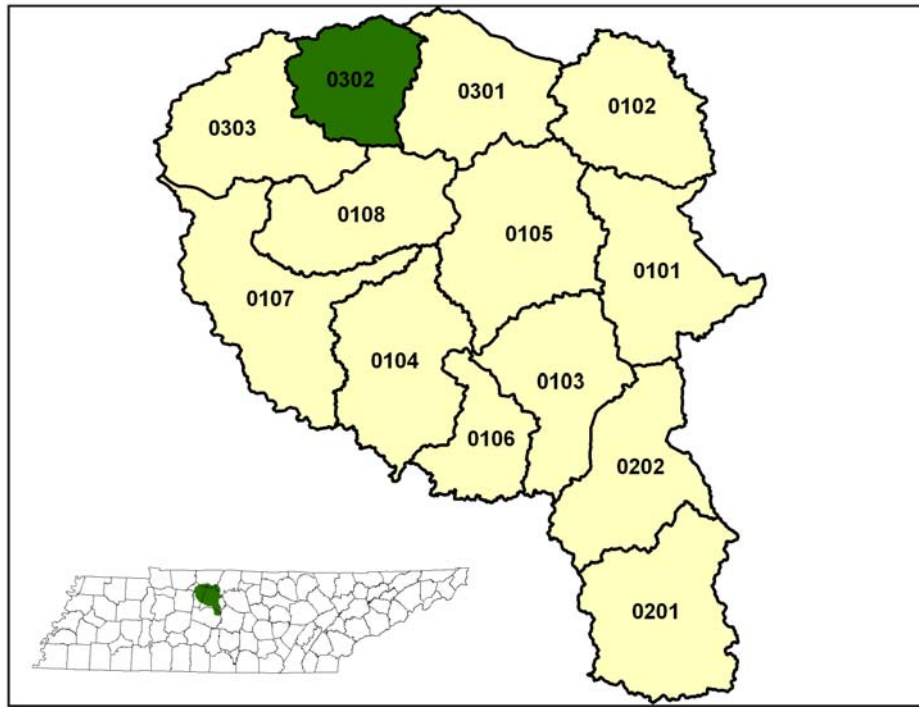


Figure 4-140. Location of Subwatershed 051302020302. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

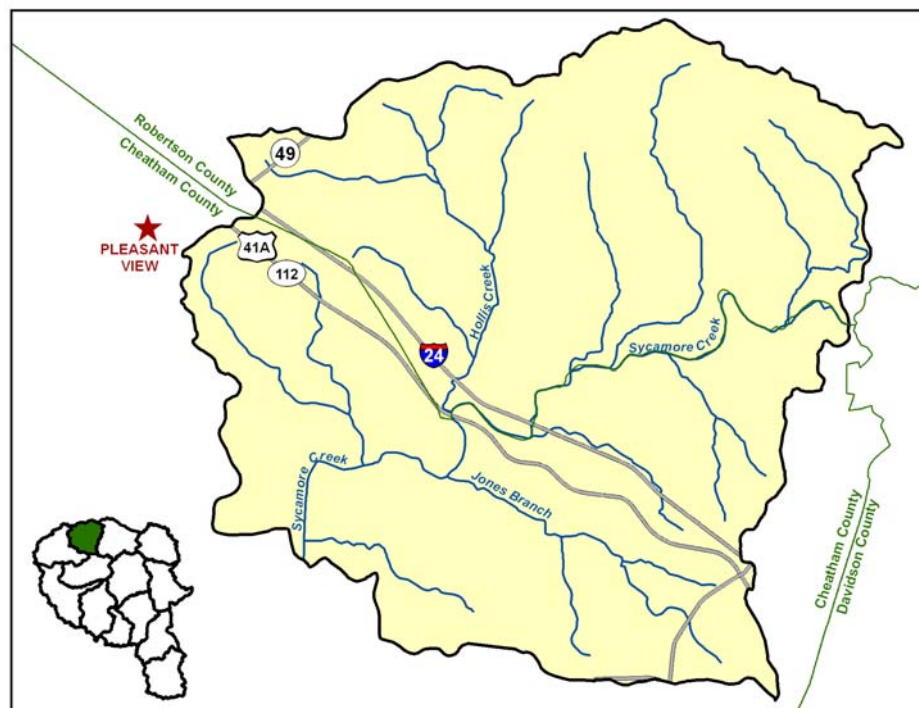


Figure 4-141. Locational Details of Subwatershed 051302020302.

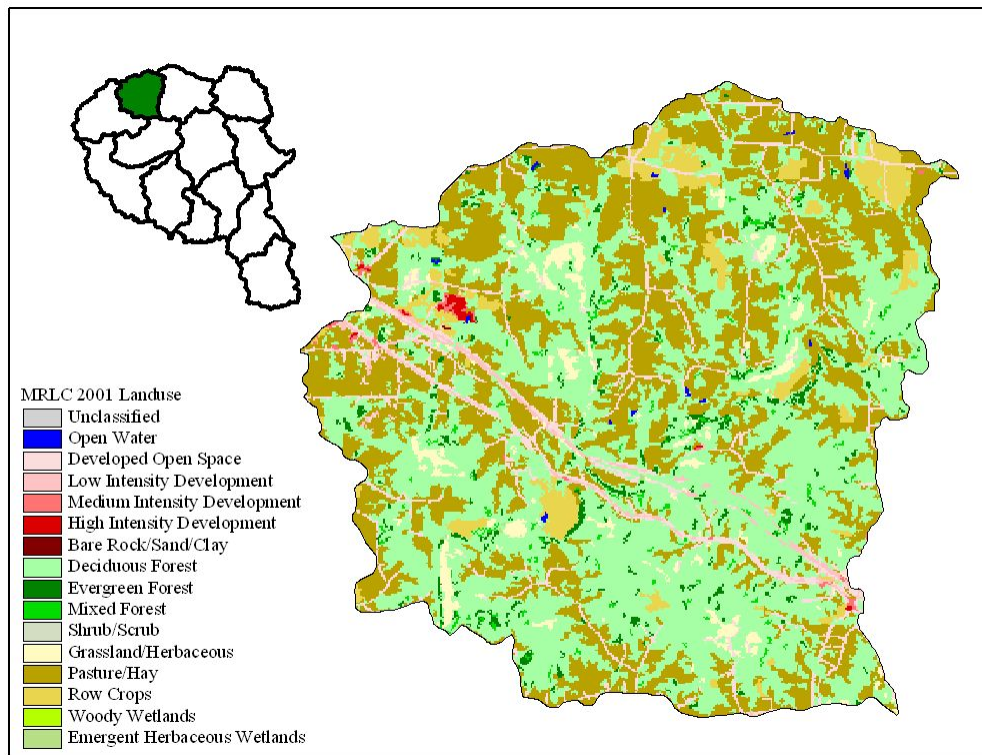


Figure 4-142. Illustration of Land Use Distribution in Subwatershed 051302020302.

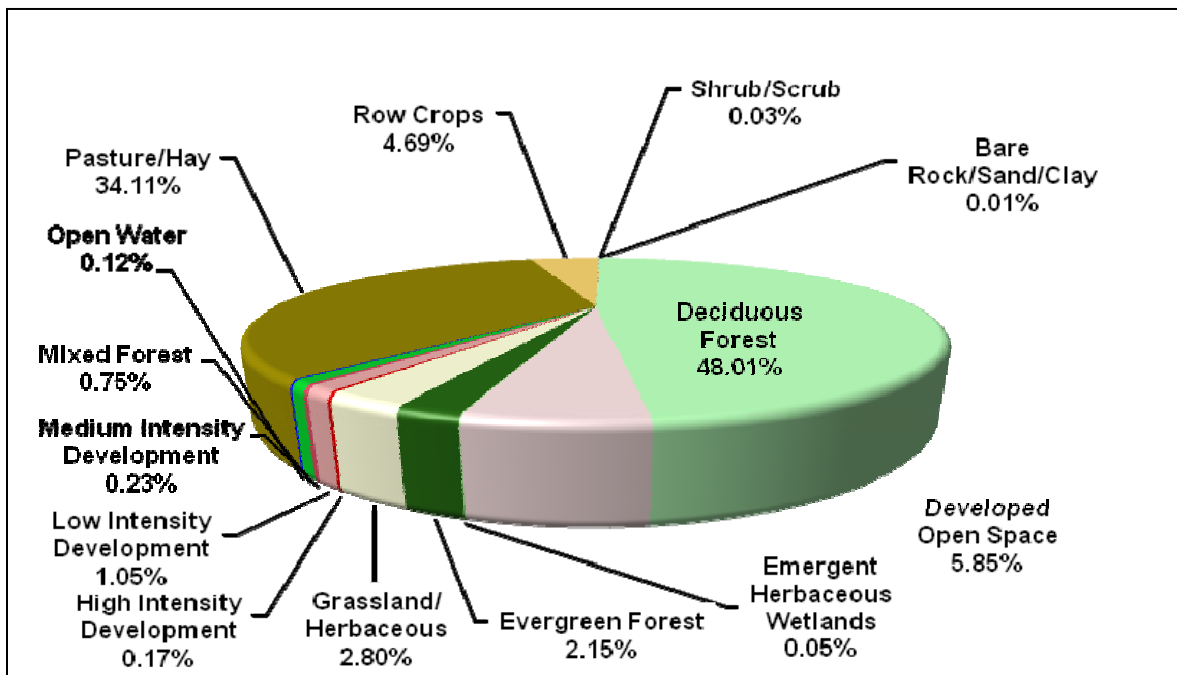


Figure 4-143. Land Use Distribution in Subwatershed 051302020302. More information is provided in Appendix IV.

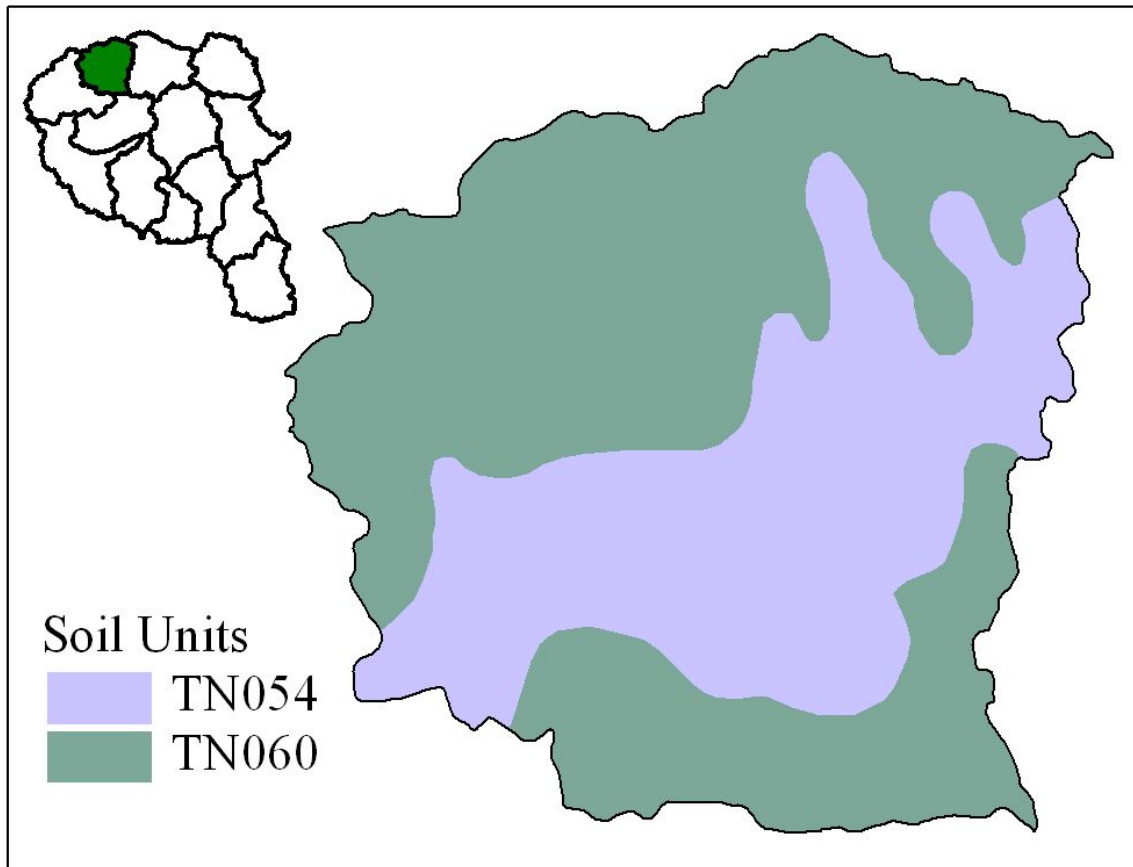


Figure 4-144. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020302.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39

Table 4-68. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020302. The definition of "Hydrologic Group" is provided in Appendix IV.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Cheatham	27,140	34,402	35,912	5.30	1,437	1,822	1,902	32.40
Robertson	41,494	51,533	54,433	3.57	1,483	1,841	1,945	31.20
Total	68,634	85,935	90,345		2,920	3,663	3,847	31.70

Table 4-69. Population Estimates in Subwatershed 051302020302.

4.2.L.ii. USGS Gaging Stations and STORET Sites.

There are no USGS continuous record gaging stations located in subwatershed 051302020302.

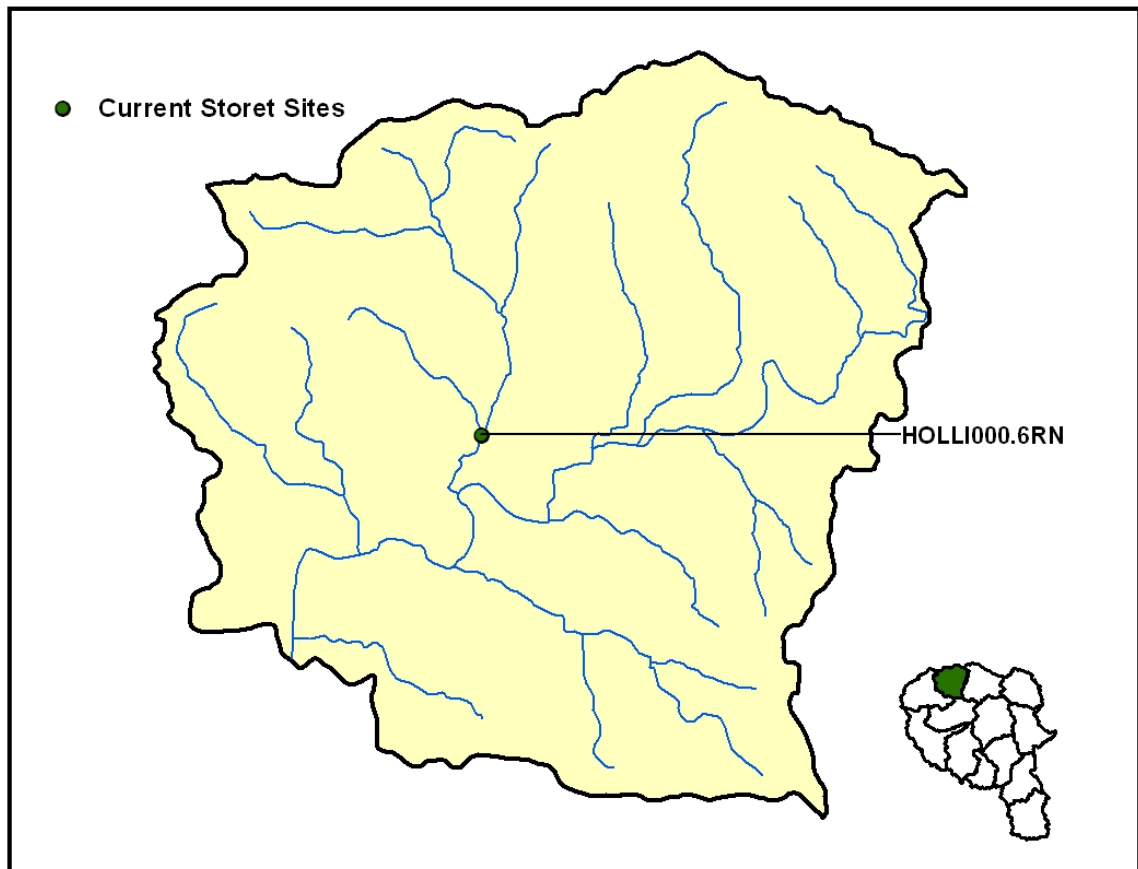


Figure 4-145. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020302. More information, including site names and locations, is provided in Appendix IV.

4.2.L.iii. Permitted Activities.

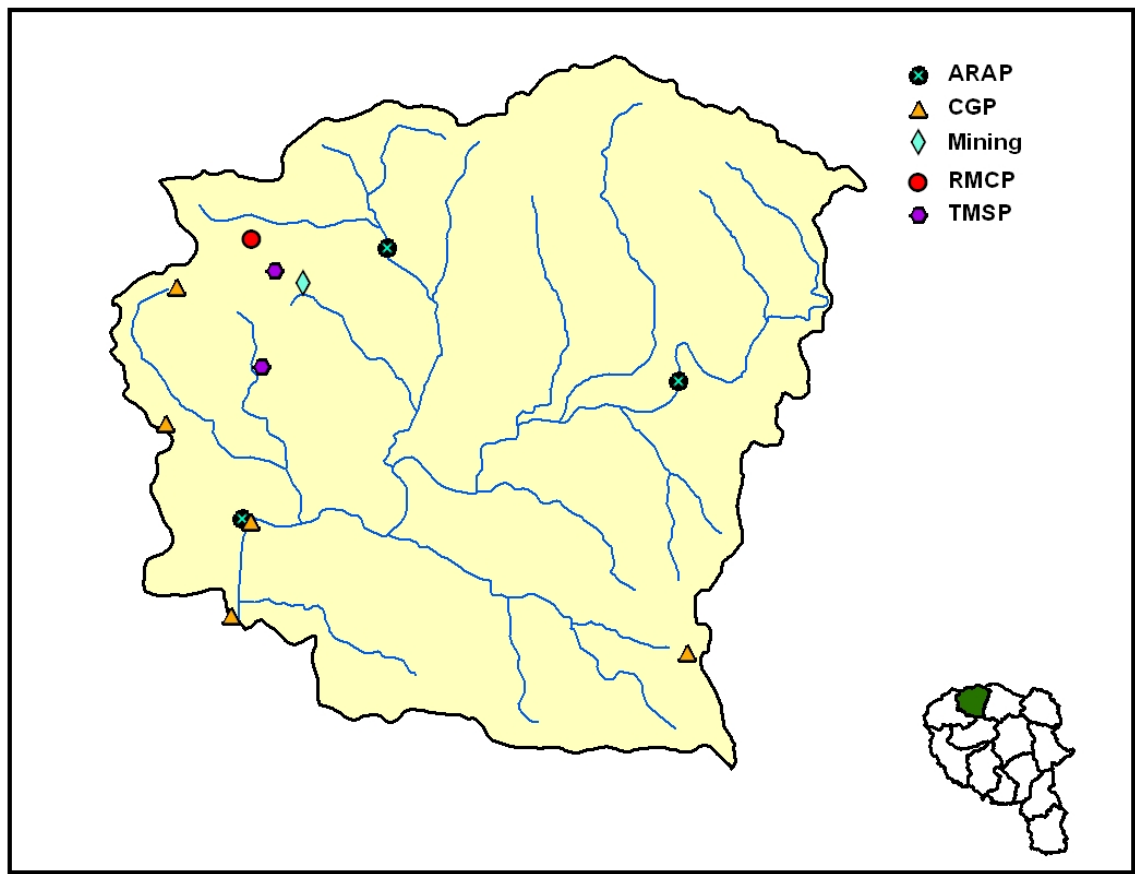


Figure 4-146. Location of Permits Issued in Subwatershed 051302020302. More information, including the names of facilities, is provided in Appendix IV.

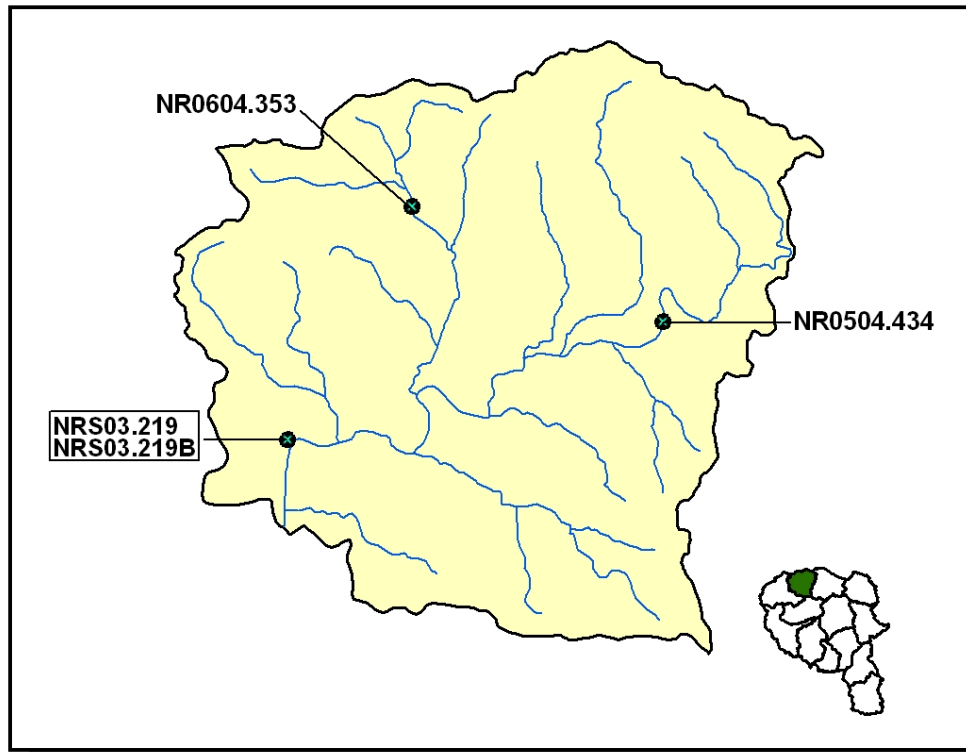


Figure 4-147. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020302. More information is provided in Appendix IV.

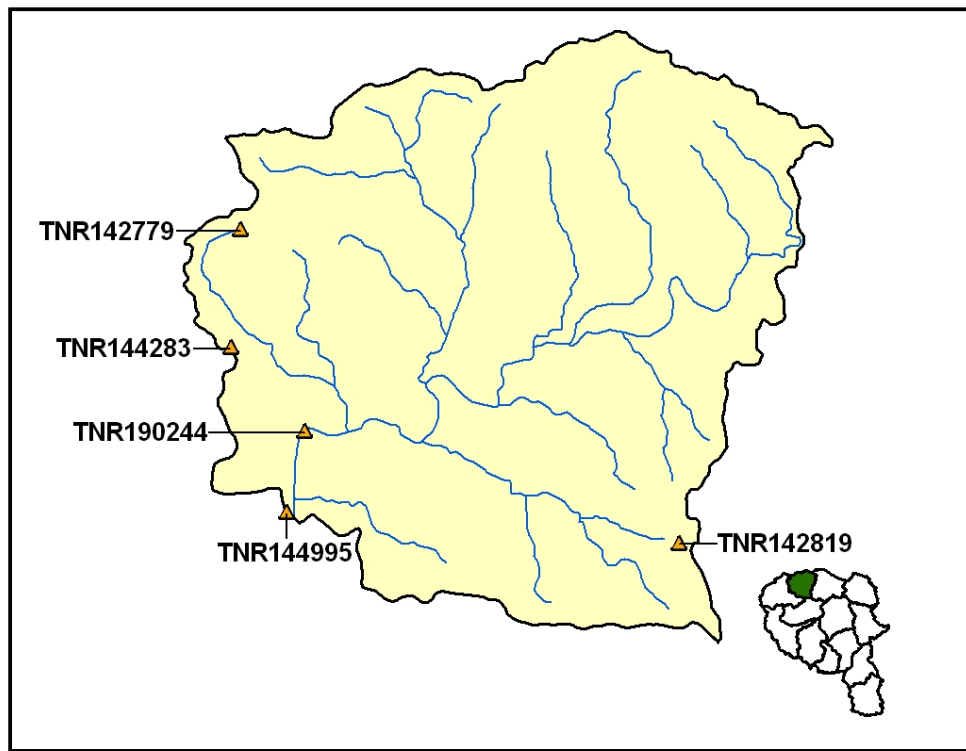


Figure 4-148. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020302. More information is provided in Appendix IV.

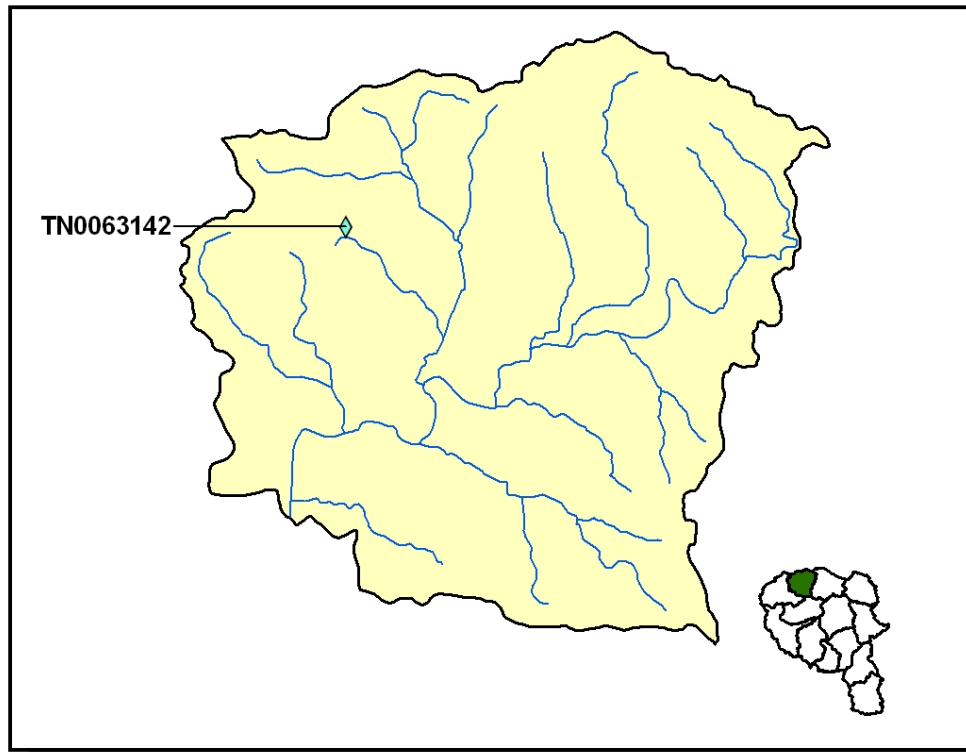


Figure 4-149. Location of permitted MINING facilities in Subwatershed 051302020302. More information is provided in Appendix IV.

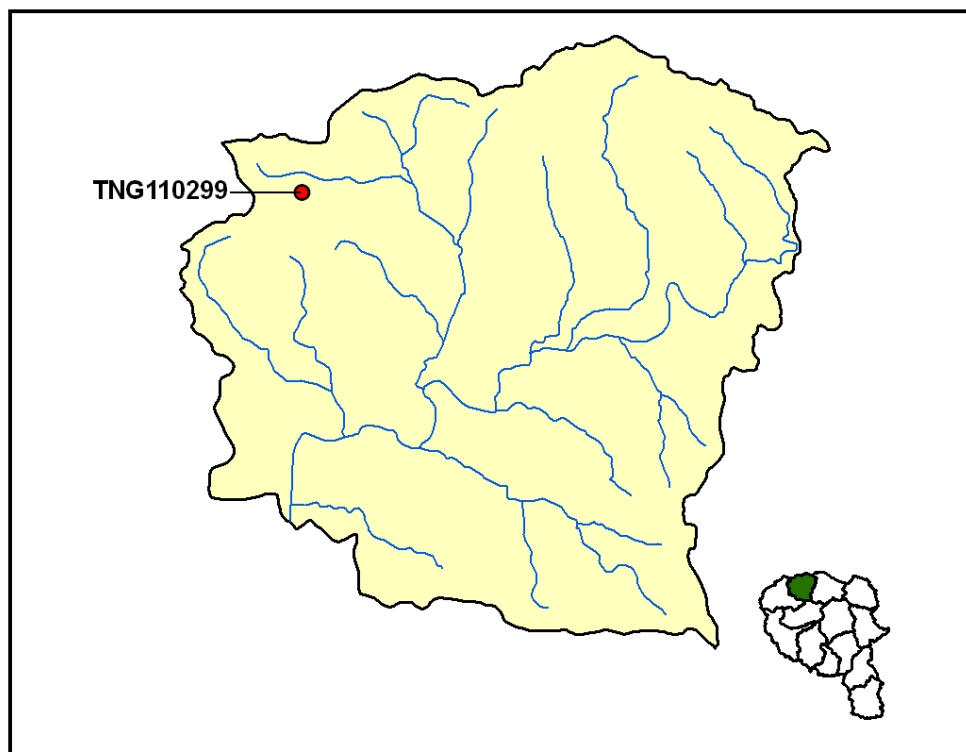


Figure 4-150. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020302. More information, including the names of facilities, is provided in Appendix IV.

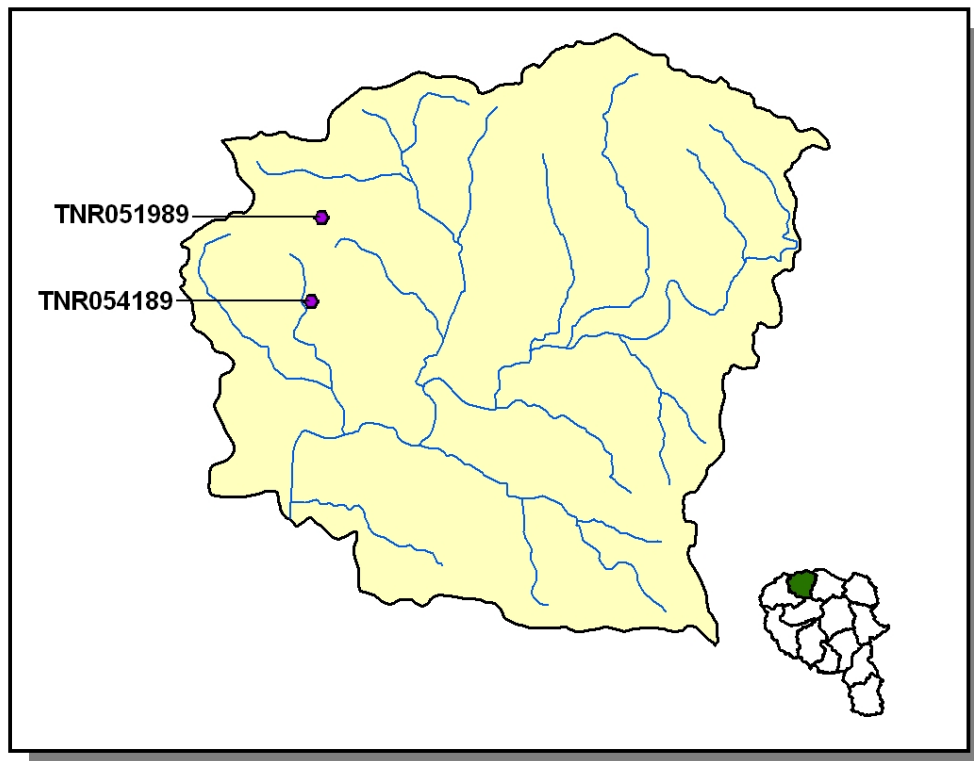


Figure 4-151. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020302. More information is provided in Appendix IV.

4.2.L.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Robertson	22,502	47,887	3,478	31	6,982	279

Table 4-70. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Robertson	53.0	53.0	2.2	9.7

Table 4-71. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	11.87
Soybeans (Row Crops)	9.78
Corn (Row Crops)	6.77
Other Cropland not Planted	5.25
Wheat (Close Grown Cropland)	1.68
Grass (Pastureland)	0.68
Grass Forbs Legumes Mixed (Pastureland)	0.62
Farmsteads and Ranch Headquarters	0.59
Legume (Hayland)	0.56
Grass (Hayland)	0.43
Legume Grass (Hayland)	0.42
Conservation Reserve Program Land	0.36
Other Land in Farms	0.27

Table 4-72. Annual Estimated Total Soil Loss in Subwatershed 051302020302.

4.2.M. 051302020303 (Sycamore Creek, Lower).

4.2.M.i. General Description.

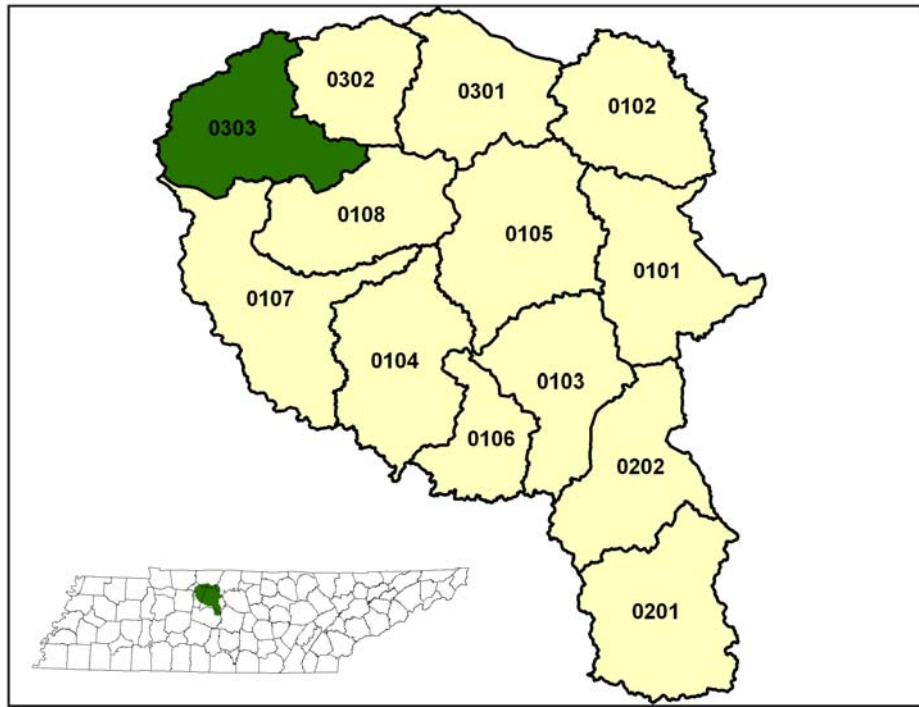


Figure 4-152. Location of Subwatershed 051302020303. All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.

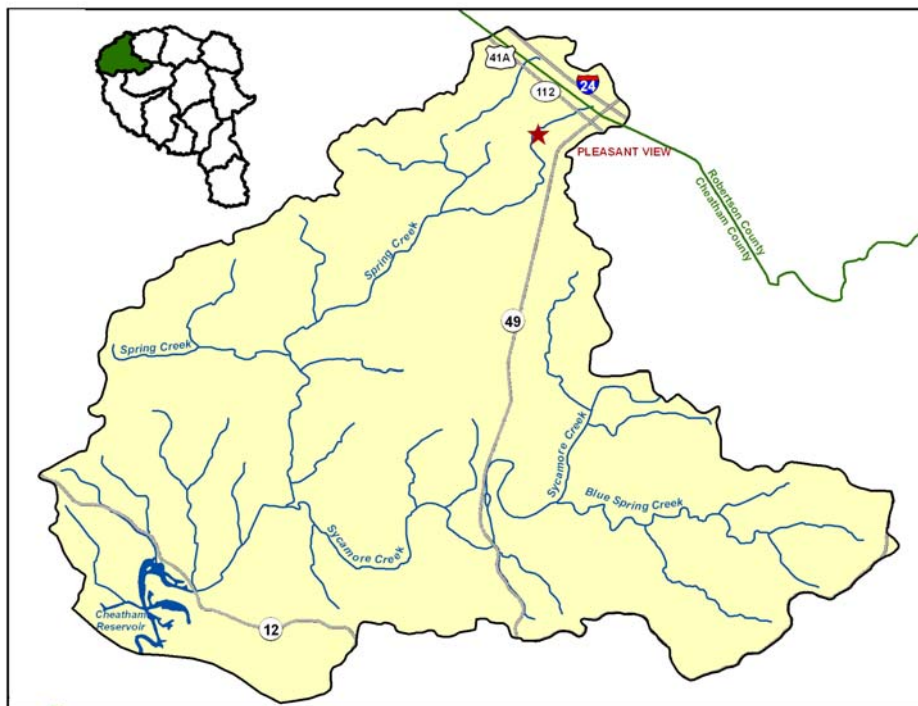


Figure 4-153. Locational Details of Subwatershed 051302020303.

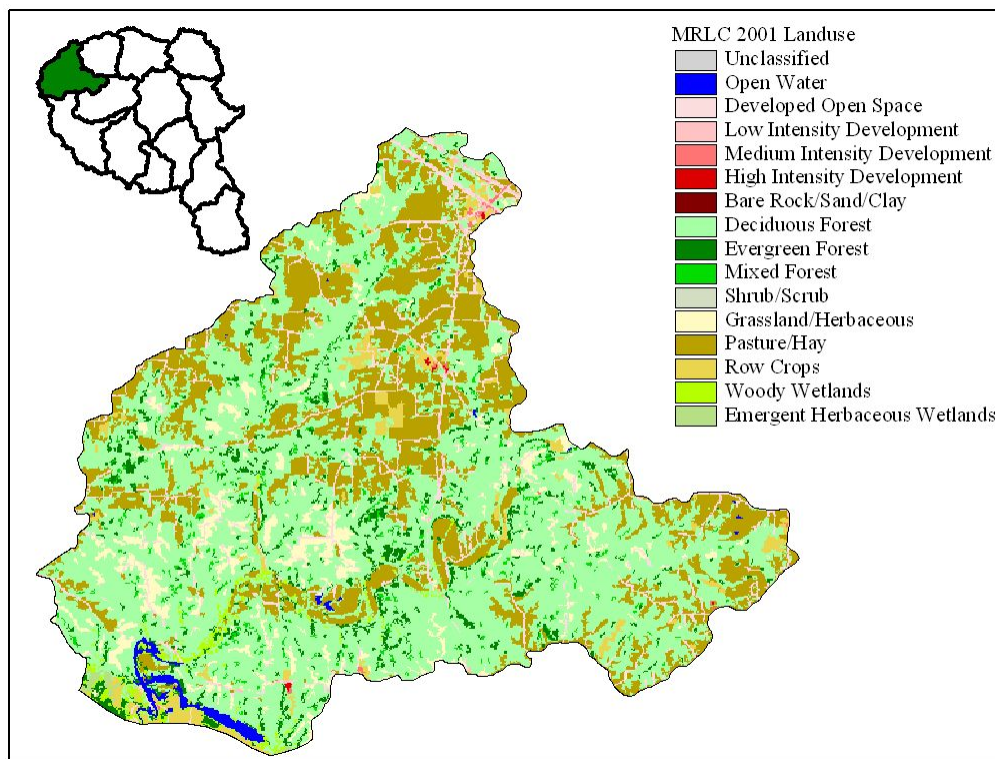


Figure 4-154. Illustration of Land Use Distribution in Subwatershed 051302020303.

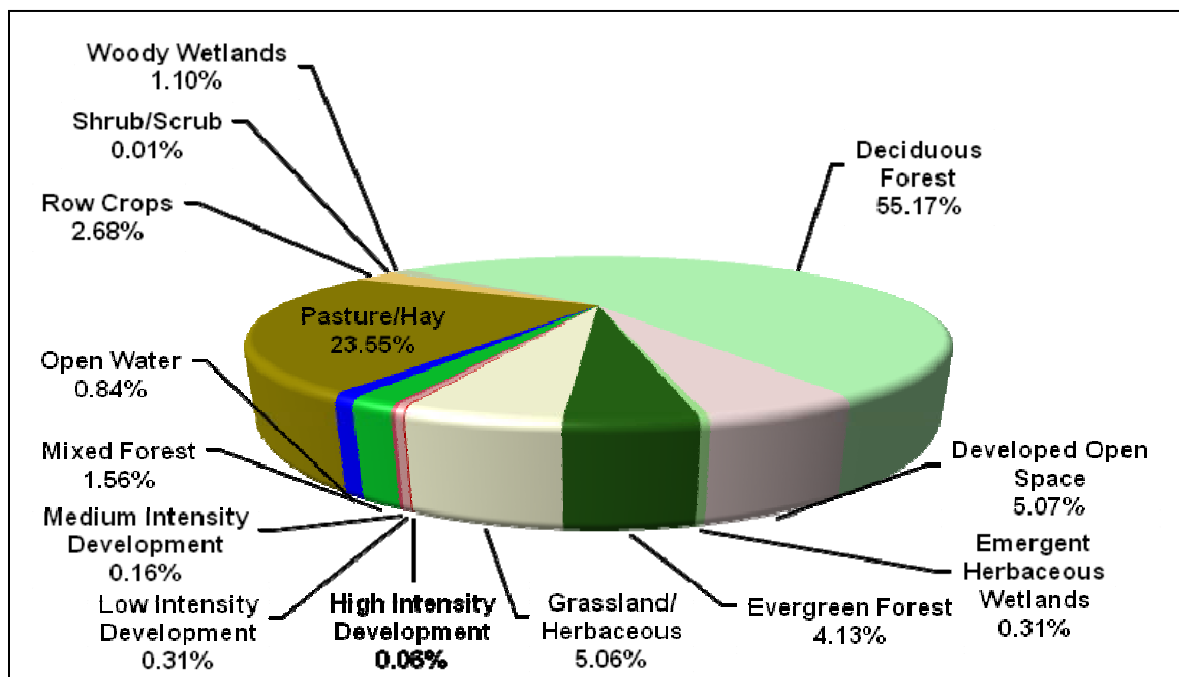


Figure 4-155. Land Use Distribution in Subwatershed 051302020303. More information is provided in Appendix IV.

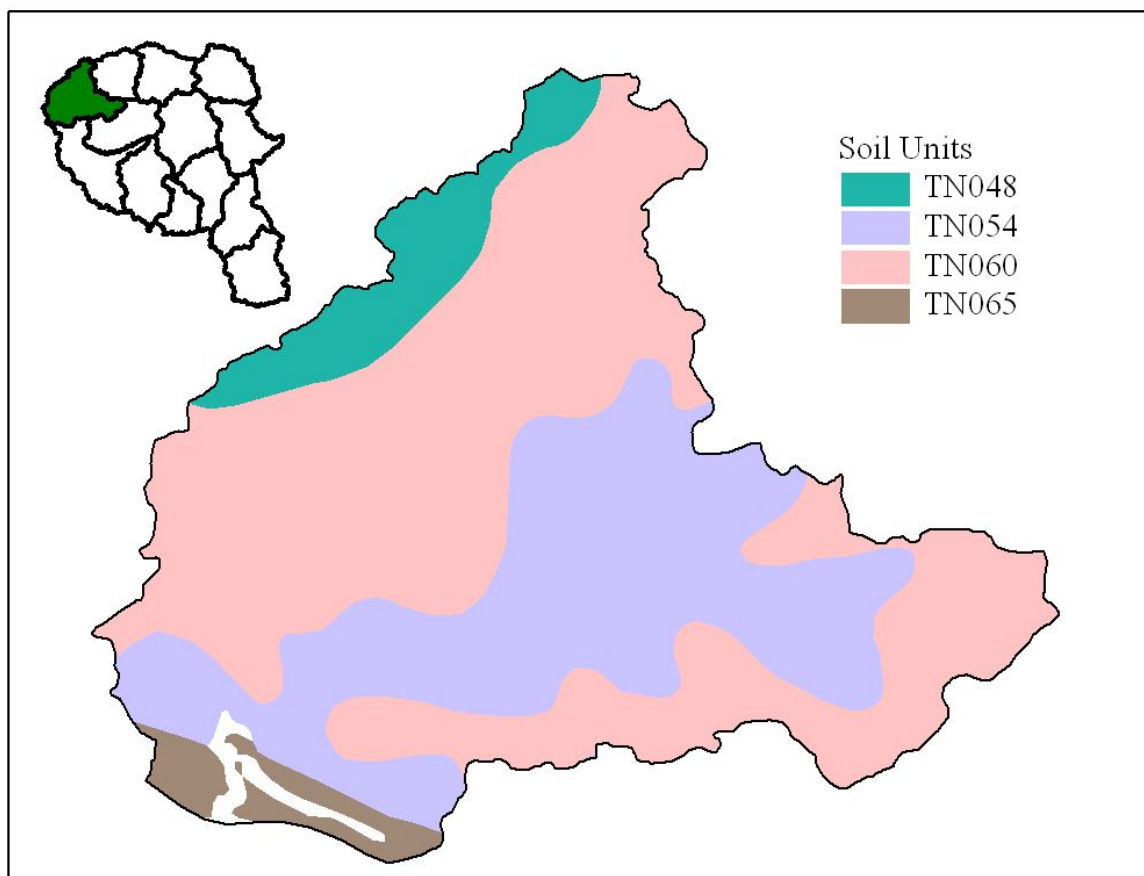


Figure 4-156. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020303.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN048	8.00	C	1.38	5.06	Silty Loam	0.42
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN065	0.00	C	1.15	5.52	Loam	0.32

Table 4-73. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020303. The definition of "Hydrologic Group" is provided in Appendix IV.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Cheatham	27,140	34,402	35,912	16.26	4,412	5,592	5,838	32.30
Robertson	41,494	51,533	54,433	0.11	46	57	60	30.40
Total	68,634	85,935	90,345		4,458	5,649	5,898	32.30

Table 4-74. Population Estimates in Subwatershed 051302020303.

4.2.M.ii. USGS Gaging Stations and STORET Sites.

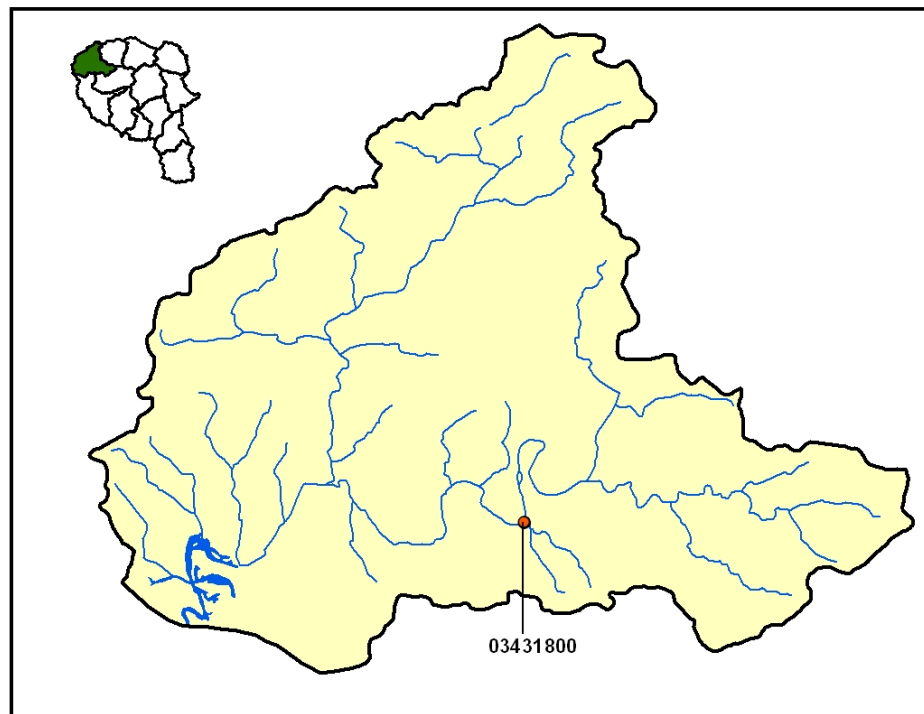


Figure 4-157. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020303. More information is provided in Appendix IV.

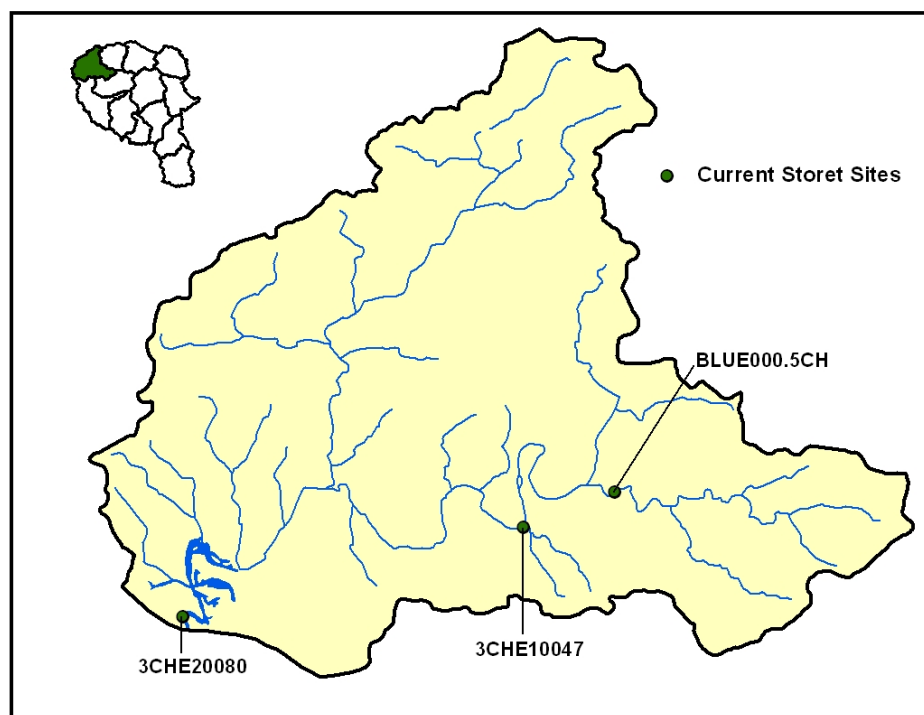


Figure 4-158. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020303. More information, including site names and locations, is provided in Appendix IV.

4.2.M.iii. Permitted Activities.

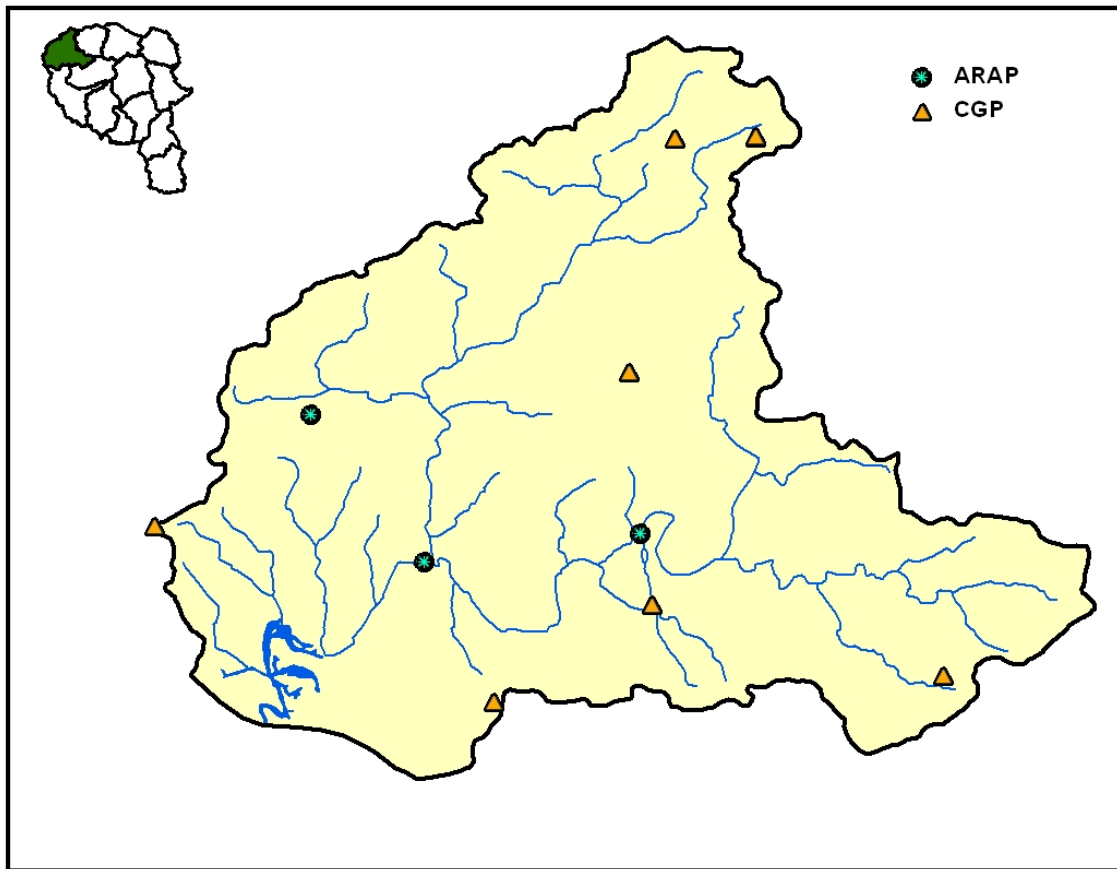


Figure 4-159. Location of Permits Issued in Subwatershed 051302020303. More information, including the names of facilities, is provided in Appendix IV.

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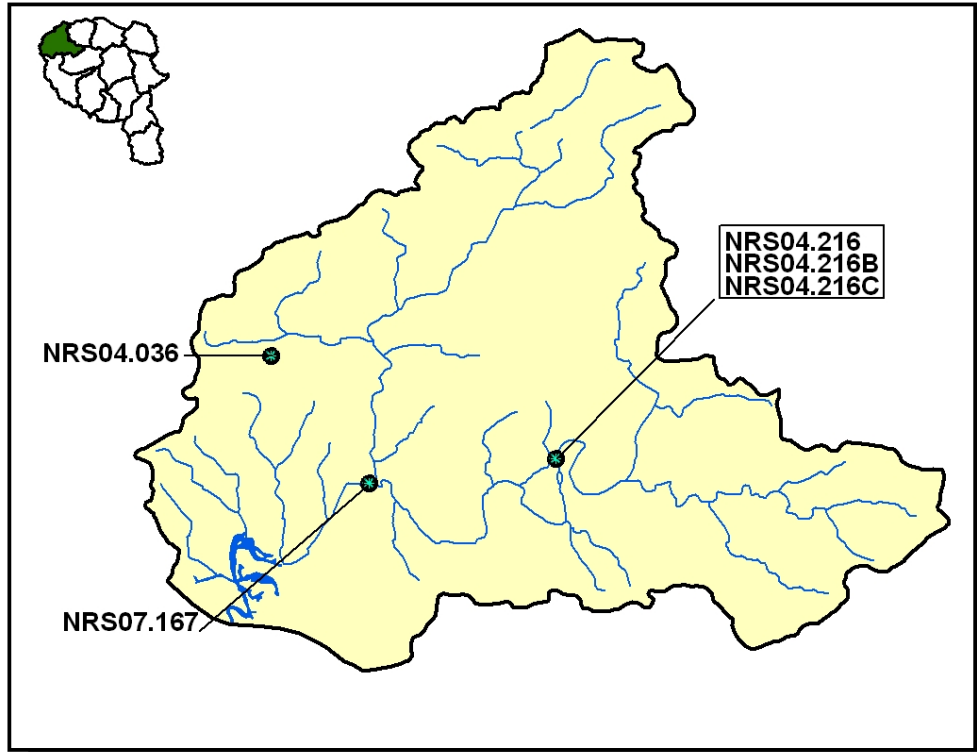


Figure 4-160. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020303. More information is provided in Appendix IV.

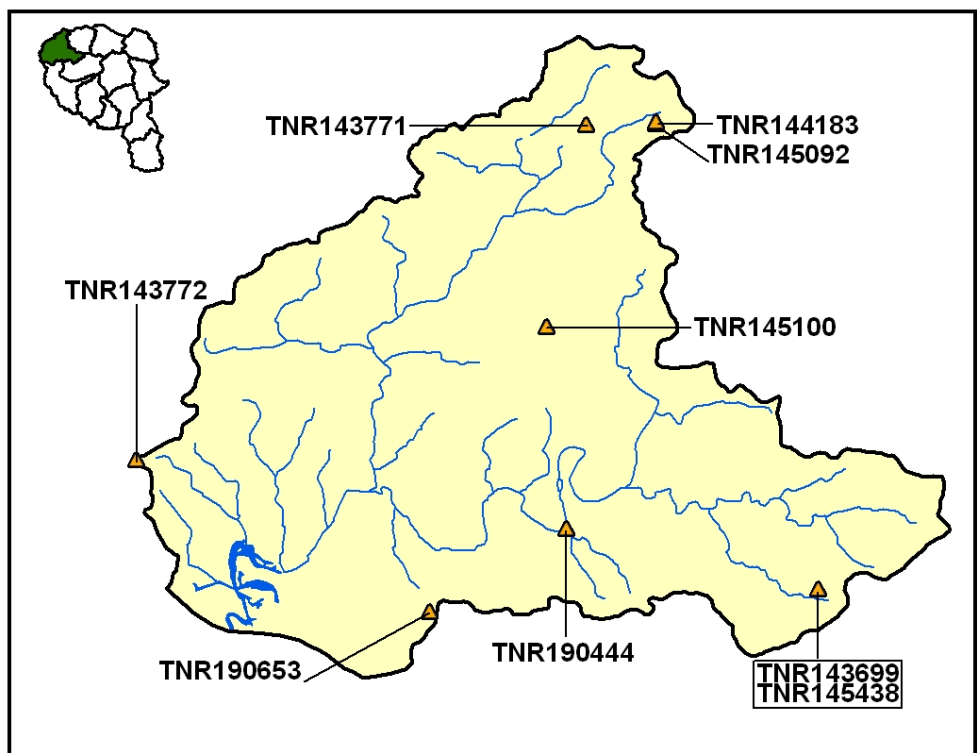


Figure 4-161. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020303. More information is provided in Appendix IV.

4.2.M.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Robertson	22,502	47,887	3,478	31	6,982	279

Table 4-75. Summary of Livestock Count Estimates by County. According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Robertson	53.0	53.0	2.2	9.7

Table 4-76. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	11.87
Soybeans (Row Crops)	9.52
Corn (Row Crops)	8.49
Wheat (Close Grown Cropland)	1.68
Grass Forbs Legumes Mixed (Pastureland)	0.84
Grass (Pastureland)	0.69
Other Cropland not Planted	0.62
Grass (Hayland)	0.50
Legume (Hayland)	0.38
Conservation Reserve Program Land	0.36
Legume Grass (Hayland)	0.29
Other Land in Farms	0.27
Farmsteads and Ranch Headquarters	0.21
Tobacco (Row Crops)	11.87
Soybeans (Row Crops)	9.52

Table 4-77. Annual Estimated Total Soil Loss in Subwatershed 051302020303.